

## INFORMATION TO USERS

The most advanced technology has been used to photograph and reproduce this manuscript from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book. These are also available as one exposure on a standard 35mm slide or as a 17" x 23" black and white photographic print for an additional charge.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

# U·M·I

University Microfilms International  
A Bell & Howell Information Company  
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA  
313/761-4700 800/521-0600



**Order Number 8915828**

**A study of the economic content in antitrust litigation**

**Seiler, Gary Ray, Ph.D.**

**University of Minnesota, 1989**

**Copyright ©1989 by Seiler, Gary Ray. All rights reserved.**

**U·M·I**

**300 N. Zeeb Rd.  
Ann Arbor, MI 48106**





A STUDY OF THE ECONOMIC CONTENT  
IN ANTITRUST LITIGATION

A THESIS  
SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL  
OF THE UNIVERSITY OF MINNESOTA

BY  
GARY R. SEILER

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF  
DOCTOR OF PHILOSOPHY

FEBRUARY, 1989

c Copyright by Gary R. Seiler, 1989

All Rights Reserved

Thesis Abstract

Gary R. Seiler  
350 Words

This research represents an investigation of the economic content of the opinions of judges in federal antitrust litigation. The purpose of the study is to determine:

1. to what extent antitrust decisions are based on economic evidence or authority.
2. how the use of economic evidence has changed over time.
3. whether the type and amount of economic evidence changes among the Federal court levels.

A sample of 84 case opinions from the population of antitrust cases reaching the opinion stage between 1940 and 1987 was selected. Computer assisted and manual content analysis procedures were used to analyze the cases and to develop a data base of economic content for the study. An economic dictionary and eleven measures of economic content were developed for the study and applied against the cases in the data base. The measures were used to test five hypotheses concerning the level and type of economic content of the case opinions.

The findings of the study indicate that two of the eleven economic measures show significant differences in the level of economic content, when the cases are divided into four equal time periods. Further, when the antitrust case opinions are divided into two equal time periods, five of the economic measures show significant differences in the level of economic content. This comparison of pre-1964 and post-1964 antitrust case opinions show that cases decided after 1964 generally rely more heavily on economic content.

The findings also show that the Supreme Court is the heaviest user of economic content. Eight of the eleven measures show a significant difference between Supreme Court case opinions and those of the other two Federal court levels. There appears to be no relationship, however, between the business and economic environment of the country and the level of economic content in the cases. Nor did the findings show a relationship between the type of judgment approach ("per se" vs. "rule of reason") used in the case and the level of economic content. A tentative finding is that there is a relationship between the type and level of economic content and the manner in which the court categorizes the antitrust violation. More research, using the tools developed for this study, is recommended.

*W. Bruce Erickson*

---

W. Bruce Erickson, Ph.D.  
Department of Strategic Management and Organization

## ACKNOWLEDGEMENTS

There are many people to thank for the help they gave in this dissertation process. I extend a special recognition and appreciation to the following:

- o My advisor, Dr. Bruce Erickson and the other members of the dissertation committee, Dr. Charles Hopkins, Dr. A. Wickesberg, Dr. Bruce Dalgaard, and Dr. Ian Maitland were especially helpful through the entire process. Dr. Erickson deserves special mention for his guidance and encouragement.
- o West Publishing Company, which granted me access to their data base of case opinions, and Mr. William Lindberg were particularly kind and generous with their resources.
- o Friends and colleagues at the College of St. Catherine were tremendously supportive. David Emerson, Jennette Gudgel, Kelly Ott, David Dahlberg, and Mary Jo Rogalski are the kind of friends that one wishes for but seldom finds. They are a very special group of people.
- o The University of Minnesota Academic Computing Center, which partially supported my research, and Karl Kron for his help with the statistics.
- o Family and friends who have traveled this journey with me. Ken Hess, Claudia Gilbertson, Jeanne Buckeye, and the Truitt family, who gave me great encouragement. Dr. Marcia Agee, who helped me keep my perspective. Bonnie, Debra, and Tom Host, who enabled me to keep my sense of humor. Gary, Don, Tom, and Verna Alfred, who have always been there, when I needed them. My parents, Herman and Loretta, who have always been with me in this endeavor.

Thank you all.

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION . . . . .	1
Importance Of The Study . . . . .	2
Increased Litigation . . . . .	3
Increased Merger Activity . . . . .	4
Prescriptive Business Strategy . . . . .	5
Purpose Of The Study . . . . .	6
Hypotheses To Be Tested . . . . .	8
Background Of Antitrust Laws . . . . .	9
The Sherman Act . . . . .	9
The Federal Trade Commission Act . . . . .	11
The Clayton Act . . . . .	11
The Robinson-Patman Act . . . . .	12
The Celler-Kefauver Act . . . . .	14
Antitrust Definitions and Distinctions . . . . .	15
Judgment Approaches . . . . .	15
"Per Se" Judgments . . . . .	15
"Rule of Reason" Judgments . . . . .	17
Approaches To Analyzing Antitrust Behavior . . . . .	18
Classical Economic Theory Approach . . . . .	19
Pure Competition . . . . .	19
Monopoly . . . . .	21
Consumer Welfare . . . . .	21
Conduct-Structure-Performance Approach . . . . .	22
Workable Competition Approach . . . . .	25
Delimitations . . . . .	26
Limitations Of The Study . . . . .	27
Accessibility Problems . . . . .	28
Technology Limitations . . . . .	29
Resource Limitations . . . . .	29
Overview Of The Study . . . . .	30
II. REVIEW OF ANTITRUST LITERATURE . . . . .	32
Antitrust Enforcement . . . . .	32
Enforcement Agencies . . . . .	32
Antitrust Division . . . . .	33
Federal Trade Commission . . . . .	35
Private Enforcement . . . . .	36
Antitrust Charges . . . . .	39

	<u>Page</u>
Remedies Applied . . . . .	41
Injunctive Relief . . . . .	42
Divorcement, Dissolution, and Divestiture . . . . .	43
Consent Judgments . . . . .	44
Money Damages . . . . .	45
History of Antitrust Enforcement . . . . .	48
The Formative Years . . . . .	50
New Legislation, New Behaviors . . . . .	53
Normalcy And Inaction . . . . .	55
New Deals, New Wars, and New Directions . . . . .	57
Activist Court . . . . .	60
Counter Attack . . . . .	64
Purpose of Antitrust Law . . . . .	65
Confusion and Conflict . . . . .	67
Problems With Uncertainty . . . . .	68
Ideological Battleground . . . . .	69
Two Approaches To Antitrust Theory . . . . .	72
Differentiating Elements . . . . .	73
The Economic Efficiency-Classical Approach . . . . .	74
Antitrust Goals . . . . .	76
Propositions and Assumptions . . . . .	78
Methods of Analysis . . . . .	81
Use of Classical Models . . . . .	81
Reaction Against Other Models . . . . .	83
Policy Implications and Prescriptions . . . . .	85
A Consumer Welfare Standard . . . . .	85
A Limited Horizontal Focus . . . . .	86
A Green Light On Vertical Activities . . . . .	87
The Multiple Goal-Situational Approach . . . . .	89
Antitrust Goals . . . . .	89
Goal Divergence . . . . .	90
The Industrial Organization Process Group . . . . .	92
Propositions and Assumptions . . . . .	92
Characteristics of the Industrial Organization Process Approach . . . . .	96
Workable Competition . . . . .	98
Theory of Second Best . . . . .	101
Methods of Analysis . . . . .	102
Industry Studies . . . . .	105
Measures of Conduct, Structure, and Performance . . . . .	107
Policy Implications and Prescriptions . . . . .	109
Enforce Existing Laws . . . . .	109
Control Market Structure . . . . .	111

	<u>Page</u>
Restrict Specified Market Conduct . . . . .	113
Remedy Non-competitive Market Performance . . . . .	116
Selection of Standard . . . . .	118
Social-Political Values Group . . . . .	120
Differences With Chicago . . . . .	121
Alternative Values and Goals . . . . .	125
Societal Values and Goals . . . . .	126
Antitrust Goals . . . . .	128
Societal Goals Measurement . . . . .	129
Policy Implications and Prescriptions . . . . .	130
Political Values and Goals . . . . .	133
Antitrust Goals . . . . .	133
A Minimum of Political Interference . . . . .	135
The Protection of Individuals and Businesses . . . . .	137
Political Goals Measurement . . . . .	138
Policy Implications and Prescriptions . . . . .	142
Protecting Competitors . . . . .	142
Slowing Merger Trends . . . . .	144
Deconcentrating Industries . . . . .	145
III. METHODOLOGY . . . . .	148
Content Analysis Approach . . . . .	148
Content Analysis Defined . . . . .	149
Content Analysis Applications . . . . .	150
Uses and Kinds of Inferences . . . . .	151
Systems . . . . .	151
Indices . . . . .	152
Institutional Processes . . . . .	152
Research Design . . . . .	153
Research Instruments . . . . .	154
GENCORD Analysis . . . . .	155
Dictionaries . . . . .	155
Case Data Base . . . . .	156
Content Analysis Program . . . . .	157
Summary Form Analysis . . . . .	157
Study Population . . . . .	158
Study Sample . . . . .	159
Type of Statistical Analysis . . . . .	160
Proportion of Cases in Sample . . . . .	160
Nature of Instruments . . . . .	161
Sampling Procedure . . . . .	162
Stratified Sample . . . . .	163
Sample Selection . . . . .	163



	<u>Page</u>
Variables To Be Investigated . . . . .	164
Case Characteristic Variables . . . . .	164
Environmental Variables . . . . .	167
Economic Variables . . . . .	167
Economic Word Content Analysis . . . . .	168
Economic Factor Analysis . . . . .	171
Economic Theory Analysis . . . . .	171
Economic/Antitrust Citations . . . . .	173
Overlap in Measures . . . . .	174
Composite Variables . . . . .	175
Validity/Reliability Issues . . . . .	176
IV. FINDINGS . . . . .	178
Frequency Distribution of Economic Measures . . . . .	178
Terminology Measure . . . . .	178
Diversity Measure . . . . .	179
Concept-Theory Measure . . . . .	180
Sources Measure . . . . .	182
Structuring the Hypothesis . . . . .	184
Four Equal Time Periods . . . . .	185
Two Equal Time Periods . . . . .	187
Economic Reasoning by Court Levels . . . . .	189
Economic Reasoning by Plaintiff/Defendant . . . . .	191
Environment Effects of Economic Reasoning . . . . .	194
Environmental Variables . . . . .	195
Business Environmental Variables . . . . .	197
Environment/Economic Reasoning Relationship . . . . .	199
Correlation Analysis . . . . .	200
Time Correlation . . . . .	202
ANOVA Analysis . . . . .	203
Regression Analysis . . . . .	204
A Final Word . . . . .	207
Economic Reasoning by Judicial Interpretation . . . . .	207
Summary . . . . .	213
Issues Raised in the Chapter . . . . .	213
GENCORD vs. ECONWORD . . . . .	213
Complexity Issues . . . . .	214
Hypotheses Summary . . . . .	215

	<u>Page</u>
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . .	219
Major Findings of the Study . . . . .	219
Hypotheses Test Results . . . . .	221
Changes in Economic Content . . . . .	221
Economic Content Across Court Levels . . . . .	222
Economic Content by Plaintiff/Defendant . . . . .	223
Economic Content and Environmental Variables . . . . .	223
Economic Content and Judgment Approach . . . . .	224
Research Process Results . . . . .	225
Unique Research Approach . . . . .	225
Evaluation of "Chicago School" Claims . . . . .	226
Discussion of Findings . . . . .	228
Changes in Economic Content . . . . .	228
Economic Content Across Court Levels . . . . .	230
Economic Content by Plaintiff/Defendant Type . . . . .	232
Economic Content and Environmental Variables . . . . .	233
Economic Content and Judgment Approach . . . . .	234
Research Approach . . . . .	235
"Chicago School" Claims . . . . .	236
Claim One: Economic Criterion . . . . .	237
Claim Two: "Chicago" Victory . . . . .	237
Economic Content Evidence . . . . .	238
Models and Theory Evidence . . . . .	241
Citations Evidence . . . . .	242
Implications of the Study . . . . .	243
Implications for Business . . . . .	243
Implications for Economists . . . . .	246
Implications for Lawyers . . . . .	248
Implications for Antitrust Officials . . . . .	249
Recommended Future Research . . . . .	250
Conclusion . . . . .	253
BIBLIOGRAPHY . . . . .	255
APPENDIX A: Case Opinion Questionnaire . . . . .	265
APPENDIX B: Economic Words Counting Rules . . . . .	276
APPENDIX C: Table of Cases . . . . .	278
APPENDIX D: Economic Word Dictionary . . . . .	286
APPENDIX E: ANOVA Tables . . . . .	292

LIST OF TABLES

<u>Table</u>	<u>Table Description</u>	<u>Page</u>
1-1	TOTAL VALUE OF MERGER AND ACQUISITION TRANSACTIONS	5
1-2	PRINCIPAL ANTITRUST LAWS OF THE UNITED STATES	10
2-1	CONSENT JUDGMENTS IN CIVIL ANTITRUST CASES BROUGHT BY THE DEPARTMENT OF JUSTICE	46
2-2	ECONOMIC EFFICIENCY-CLASSICAL APPROACH	75
2-3	MULTIPLE GOAL-SITUATIONAL APPROACH/INDUSTRIAL ORGANIZATION	93
2-4	INDUSTRIAL ORGANIZATION MEASUREMENT METHODS	108
2-5	MULTIPLE GOAL-SITUATIONAL APPROACH/SOCIAL-POLITICAL	122
3-1	STUDY SAMPLE SPACE	164
3-2	STUDY VARIABLES	165
3-3	DEFINITIONS OF ECONOMIC MEASURES	169
4-1	FREQUENCY DISTRIBUTION OF ECONWORD MEASURE	179
4-2	FREQUENCY DISTRIBUTION OF ECONFACT MEASURE	180
4-3	FREQUENCY DISTRIBUTION OF CONCEPT-THEORY MEASURES	181
4-4	FREQUENCY DISTRIBUTION OF SOURCES MEASURES	183
4-5	MEANS OF ECONOMIC MEASURES IN FOUR TIME PERIODS	186
4-6	MEANS OF ECONOMIC MEASURES IN TWO TIME PERIODS	188
4-7	MEANS OF ECONOMIC MEASURES AT THREE COURT LEVELS	190
4-8	PLAINTIFF/DEFENDANT TYPES	192
4-9	RELATIONSHIP BETWEEN ECONOMIC REASONING AND PLAINTIFF/DEFENDANT	193
4-10	ENVIRONMENTAL VARIABLES 1940-1987	196
4-11	BUSINESS ENVIRONMENT 1940-1987	198
4-12	CORRELATION COEFFICIENTS OF SELECTED ENVIRONMENTAL VARIABLES	201

LIST OF TABLES (continued)

<u>Table</u>	<u>Table Description</u>	<u>Page</u>
4-13	CORRELATION OF TIME WITH ECONOMIC MEASURES	202
4-14	RELATIONSHIP BETWEEN POLITICAL ENVIRONMENT AND ECONOMIC REASONING	203
4-15	REGRESSION MODELS FOR ECONOMIC MEASURES AND ENVIRONMENTAL VARIABLES	205
4-16	ANTITRUST VIOLATIONS JUDGMENT APPROACH	209
4-17	TYPE OF EVIDENCE USED TO EVALUATE CASES	210
4-18	CONDUCT VS. OTHER TYPES OF EVIDENCE USED TO EVALUATE CASES	212
4-19	COMPARISON OF ECONWORD AND GENWORD RESULTS ON SELECTED HYPOTHESES	214
4-20	HYPOTHESES SUMMARY	216
5-1	SUMMARY OF RESEARCH FINDINGS	220

LIST OF EXHIBITS

<u>Exhibit</u>	<u>Exhibit Descriptions</u>	<u>Page</u>
1-1	CLASSICAL ECONOMIC MODELS FOR ANTITRUST ANALYSIS	20
1-2	A MODEL OF INDUSTRIAL ORGANIZATIONAL ANALYSIS	23

## CHAPTER I

### INTRODUCTION

The passage of the Sherman Antitrust Act in 1890 represented a critical juncture in the evolution of the American Business system. The Act, along with its amendments and supplements, defines permissible competitive behavior and establishes the parameters of the relationships between business and government, between business and consumers, and among businesses. With this type of comprehensive charge, its sobriquet as the "economic charter of freedom" seems entirely justified. However, almost from its inception, the Act has engendered controversy and disagreement concerning its basic legislative intent, the methods of its implementation, and its impact on competition, consumers, and the economy. The contending parties in these controversies include justices, lawyers, economists, philosophers, business people, politicians, academicians, consumer groups, and others.

The controversies surrounding the antitrust laws, which incorporate the Sherman Act and many other pieces of legislation, are not likely to diminish or be resolved anytime soon. It is also unlikely that there will be a clear, long-term "winner" among the various philosophical "schools" concerning how the laws ought to be interpreted. Nor does it seem likely, given the growth of antitrust regulation in many other parts of the world, that antitrust in the United States will completely disappear. Rather, it is more likely that there will be continued debate within a dynamic environment of changing competitive situations, evolving analytical tools, a growing

body of judicial interpretation, new legislative initiatives, altering political power bases and philosophies, and fluid social and economic contexts.

Recent antitrust literature suggests that there has been a marked departure in the manner in which justices of the court have approached antitrust cases. Specifically, it is asserted that the economic content in antitrust litigation has significantly changed from earlier periods. The central focus of this study is to evaluate federal antitrust cases brought to decision since 1940. The purpose is to determine whether these observations concerning economic content are true and to examine the existence and nature of relationships among case characteristics, economic variables, and environmental factors.

#### Importance Of The Study

The manner in which antitrust laws are established, interpreted, and enforced in the United States represents a critical element of the business and economic environments. Particularly important for decision makers in business and government are court interpretations which have the effect of defining and altering the parameters within which competition must occur. It is, therefore, essential that individuals within business and government have an understanding of the evolution of antitrust law, as interpreted by the courts, and that they be able to identify the primary factors that guide the courts in their decisions. It is also of great import that decision makers recognize changing and emerging trends in court decisions as early as possible. One of these critical factors that merits close tracking is the economic content of antitrust cases.

Adding to the importance of the topic are three relatively recent trends. First, there has been an explosion in the number of antitrust cases filed within the past thirty years, drawing ever larger numbers of individuals and organizations into the legal process. Secondly, there has been a marked increase in merger and acquisition activity representing potential new cases and issues in antitrust. Finally, over the past several years the business and academic communities have witnessed the rise to importance of strategic policy decision making as an area of study and as a popular consulting topic. The result of the academic scrutiny and of the consulting is often a set of prescriptions relating to competitive behavior. Depending on the manner in which antitrust laws are interpreted and the approach the courts take to economic evidence, some of these prescriptions for competitive activities may be deemed illegal or ill-advised and subject to antitrust punishment.

#### Increased Litigation

Antitrust proceedings have, since the passage of the Sherman Act, taken on increasing importance over time. This is evidenced by the number of cases filed each year. For example, during the decade in which the Sherman Act was passed, 1890-1899, a total of 15 cases were filed. Between 1937-54 there were, on average, about 130 cases filed per year and in 1974 the annual average had risen to over 1,200 cases. The number of cases continued to increase, as is illustrated by the nearly 1,500 cases that made their way into the judicial system in 1984. Notwithstanding the particular philosophy of a given political administration, as reflected by the Justice Department's level of activity

or inactivity in bringing suit, the averages have continued to rise. This is largely the result of the tremendous number of private cases which have been filed, particularly during the past 20 years. In 1964 just over 300 private cases were filed and in 1984 the number of private antitrust case filings was close to 1,400.

#### Increased Merger Activity

An added degree of importance can be attributed to antitrust proceedings given the current business environment in which merger and acquisition activity has increased dramatically over previous time periods. Although mergers and acquisitions constitute only one element of the concern of the antitrust laws, it is one of the most publicly visible and, consequently, receives a great deal of attention. Table 1-1 below lends insight and perspective to the recent explosive growth of merger and acquisition activity.

The 1984 figures in Table 1-1 were accounted for by 2,543 corporate mergers and acquisitions and in 1986 included over 3,500, a rather large number in comparison to recent time periods. Of particular importance is the extent to which the nation's largest corporations have been participating in this activity. Since 1980, more than 60 transactions have had a value in excess of \$1 billion each, one third of them taking place in 1985 alone, and about as many figured in the \$500 million to \$1 billion value range.

It is reasonable to assume that many of these mergers and acquisitions will come under the close scrutiny of competing firms, legal staffs, regulatory agencies, and stakeholder groups, and it seems quite



likely that a number of them will, or perhaps already have, become the object of antitrust proceedings.

TABLE 1-1  
TOTAL VALUE OF MERGER AND ACQUISITION TRANSACTIONS  
(Billions of Dollars)

Year	Value
1970's*	\$ 20.6
1980	44.3
1981	82.6
1982	53.8
1983	73.1
1984	122.2
1985	179.6
1986	190.0**

Source: "Lets Do A Deal," Business Week, April 18, 1986.

\* Annual Average

\*\* Estimated

#### Prescriptive Business Strategy

The recent increased importance accorded to "strategic business policy decision making" as an area of study and specialization in business schools and the manner in which it is practiced by corporate managers across the United States is likely to be heavily influenced by interpretations which courts give antitrust law. This is especially true of the approach courts take in applying economic evidence.

A small army of academicians, consultants, and authors has been prescribing business strategies aimed at helping an organization achieve competitive advantage and market superiority. A leading proponent of this nascent business philosophy has been Michael Porter of Harvard University. However, the fashion in which his seminar for members of

management of the National Football League was introduced into evidence by attorneys for the complainant (United States Football League) in a 1985-86 antitrust case (Sports Illustrated, July 7, 1986) argues for a reevaluation of many of these strategy prescriptions. This reevaluation ought to be guided by the treatment courts have given economic and non-economic types of evidence in deciding different types of antitrust cases.

#### Purpose Of The Study

It has been suggested in the antitrust literature that the use of economic reasoning by justices in antitrust proceedings has undergone a great many changes over recent years. The central focus of this study is to evaluate federal antitrust judgments in cases decided since 1940 in order to ascertain the factualness of these observations and to examine the relationships among case characteristics, environmental variables, and environmental factors. The specific questions of interest for this study are the following:

1. **To what extent are antitrust decisions based on economic evidence or authority?**
2. **How has the use of economic evidence changed over time?**
3. **Does the type and amount of economic evidence change among the three Federal court levels? (i.e., District Court, Appellate Court, and Supreme Court)**

In conjunction with these research questions, several hypotheses have been specified (see next section) and are tested as part of the research effort.

Although there exists a substantial body of literature concerning antitrust law, it is primarily narrative and directed toward normative policy pronouncements. That is, numerous authors have examined the nature of the law and its applied results (e.g., results of selected cases) and have often recommended policy adjustments based on the conclusions of their "analysis."

Statistical studies of the body of antitrust law are rare and often limited in scope. One such study, Posner's (1970) "Statistical Study of Antitrust Enforcement," is aimed at describing the characteristics of antitrust cases (i.e., number of cases, length of proceedings, success of claimants, remedies in cases, and the industries involved). Other authors have examined individual cases, often limited to a select few landmark rulings, for the purpose of determining the impact of an antitrust ruling on a firm or industry (and by implication the "correctness" of the ruling based on its intended vs. its actual results).

Notwithstanding the importance of many of these limited efforts, there is a need for a more intensive examination of the judicial interpretations and opinions that have resulted from antitrust proceedings and which have formed the framework for antitrust enforcement. This study will examine the economic content of individual court decisions for a wide variety of cases, at several judicial levels (i.e., district, appellate, and Supreme courts), and over a protracted time frame (48 years). There are no other studies reported in the literature that attempt an analysis of this type or scope.

### Hypotheses To Be Tested

In conjunction with the purpose of the study discussed above, the following hypotheses will be tested in this study:

1. Ho: There has been no change in the amount of economic content in antitrust case opinions since 1940.  
Ha: There has been a change in the amount of economic content in antitrust case opinions since 1940.
  
2. Ho: There is no difference in the economic content among the three federal court levels.  
Ha: There is a difference in the economic content among the three federal court levels.
  
3. Ho: There is no relationship between economic content and the type of plaintiff in the case.  
Ha: There is a relationship between economic content and the type of plaintiff in the case.
  
4. Ho: There is no relationship between the economic content of a case and the economic, legal, political, and business environments.  
Ha: There is a relationship between the economic content of a case and the economic, legal, political, and business environments.
  
5. Ho: There is no relationship between the judgement approach taken to antitrust cases and the economic content.  
Ha: There is a relationship between the judgement approach taken to antitrust cases and the economic content.

The methods of operationalizing and measuring the variables contained in these hypotheses will be discussed in detail in Chapter III.

### Background Of Antitrust Laws

The antitrust laws of the United States rest on three primary legislative acts (and their principal amendments), the Sherman Act, the Federal Trade Commission Act, and the Clayton Act (see Table 1-2). The intent, primary features, and effect of each of these laws is discussed in the following sections.

#### The Sherman Antitrust Act

This seminal act, passed in the turn-of-the-century era of rampant industrial consolidations, price discrimination, and alleged competitive chicanery, has two main substantive sections. Section 1 prohibits every contract, combination or conspiracy in restraint of the interstate or foreign trade or commerce of the United States. Section 2 prohibits the monopolization or attempt or conspiracy to monopolize any part of such trade or commerce.

Violators of the provisions of this act were brought to suit by the Attorney General and subjected to equity proceedings or criminal prosecution. Maximum penalties were set at \$5,000 and one year in prison. These maximums have since been raised to \$1,000,000 for corporations (\$100,000 for individuals) and three years imprisonment (1974). In addition, private suits brought by individuals injured by violations of the Act, provided for penalties three times the damages actually sustained by the complainant.

Despite the revolutionary character of this act, few cases were brought by either the government or by private individuals in the decade following its enactment. A scarcity of funds for enforcement and

TABLE 1-2

## PRINCIPAL ANTITRUST LAWS OF THE UNITED STATES

ACT	YEAR	INTENT	EFFECT
Sherman Act	1890	Prohibit monopolies injurious to competition	Regulation of horizontal combinations and monopolies.
Federal Trade Commission Act	1914	Supplement to Sherman; established Federal Trade Commission	Agency given "cease and desist" authority to control objectional practices and broad investigatory powers.
Clayton Act	1914	Supplement to Sherman; precise enumerations of antitrust violations; stop monopoly in its incipency	Stop monopolies before formation; forbade practices whose effect was "to substantially lessen competition, or tend to create a monopoly"—i.e., price discrimination; tying and exclusive dealing; and corporate mergers and acquisitions; horizontal and vertical regulation.
Robinson-Patman Act	1936	Amendment to Clayton, Section 2, Price Discrimination	Prohibits price discrimination whose effect may be to substantially lessen or injure competition; vertical regulation of business practices.
Celler-Kefauver Act	1950	Amendments to Section 7 of Clayton; Sharpens definition of horizontal merger prohibitions	Added asset acquisitions (to "stock" acquisitions in original act) to area of enforcement; also included vertical acquisitions; concern for concentration of economic power.

prosecution, as well as a general lack of enthusiasm for confronting the behemoth organizations of that time, meant that the Act went largely untested.

#### The Federal Trade Commission Act

In 1914 two supplemental acts were passed that would add broader power and a governmental enforcement arm to the initial Sherman Act. The first of these, the Federal Trade Commission Act, empowered the President and Congress to establish the Federal Trade Commission for the purpose of performing both investigations and adjudicative functions in antitrust matters. The agency was created with the intention of supplementing the work of the Justice Department and was to be headed by a panel of five full-time commissioners with the power to issue "cease and desist orders. A second substantive element of this act outlawed "unfair methods of competition," giving the Commission wide discretion in defining exactly what practices were to be included.

This act, along with the Clayton Act, had the effect of increasing the effectiveness of the Sherman Act in two areas. First, it added to the capabilities of the government in prosecuting and enforcing antitrust laws. In addition, the new acts added to the scope of activities that could be prosecuted under antitrust laws. More will be said about this second feature in the next section.

#### The Clayton Act

Both the FTC Act and The Clayton Act were passed, according to Posner (1980), ". . . in the wake of the Supreme Court's decision in the government's case against the Standard Oil Company. Although the

Court held that Standard Oil had violated the Sherman Act, the vagueness of the Court's opinion created considerable disquiet (among both the supporters and antagonists of antitrust policy) concerning the scope and application of the act (p. 31)." What was needed they believed was a precise enumeration of antitrust violations and, consequently, the Clayton Act was passed, in part, to accomplish this. Four specific practices were singled out for regulation: 1) price discrimination, Section 2; 2) tying and exclusive dealing contracts, Section 3; 3) stock acquisitions, Section 4; and 4) interlocking directorates, Section 8. The Clayton Act further altered Sherman in Section 4, superseding Section 7 (Sherman) in authorizing treble damage suits, and in Section 5 which erased the burden of proving antitrust violation for parties suing to recover treble damages.

The underlying intent of Clayton, however, was to restrain the growth of monopolies by attacking them in their "incipiency." That is, the weakness of Sherman was that it attacked monopolies after the fact. Clayton, on the other hand, was aimed at regulating "monopolistic practices" that had the potential to lead to monopoly power. It is also important to recognize a further difference between Sherman and Clayton. Whereas Sherman focused its regulation on horizontal aspects of monopoly, at least two sections (1 and 2 above) of Clayton were aimed at regulating vertical relationships between businesses. The importance of this distinction will become more apparent in the next chapter.

#### The Robinson-Patman Act

There have been two important, substantive amendments to the Clayton Act. One is the 1950 Celler-Kefauver Act, aimed at Section 7,



and the other is the Robinson-Patman Act. The latter piece of legislation, passed in 1936, represented a restructuring of Section 2 of Clayton. Burns (1969) contends that the competitive environment of the 30's, witnessing the rise of the chain stores, gave the primary impetus to the passage of the Robinson-Patman Act:

. . . chain stores, whose greater buying power and organizational efficiency permitted them to undercut prevailing prices, threatened the very existence of the small, independent retailers, and middlemen. The growing power of the chains also secured for them preferential treatment beyond that justified by their own economic efficiency (p. 7).

With these conditions in mind, Congress passed the Robinson-Patman Act as an amendment to the price discrimination provisions in the Clayton Act. This amendment singled out for attention those pricing practices whose effect ". . . may be substantially to lessen competition or tend to create a monopoly in any line of commerce, or to injure, destroy, or prevent competition with any person who grants or knowingly receives the benefit of such discrimination, or with customers of either or them (Robinson-Patman Act, 1932)." However, sellers accused of violating this act could defend their actions on a cost justification basis or by showing that the lower price was made in good faith to meet an equally low price of a competitor.

As with its parent legislation, Section 2 of Clayton, the Robinson-Patman Act was directed at regulating the vertical relationships between businesses. The passage of this act, however, did little to retard the impact of the chain stores upon their smaller competitors. Nevertheless, The Robinson-Patman Act has had a meaningful effect on the competitive practices of firms throughout the economy.

### The Celler-Kefauver Act

The final piece of significant antitrust legislation concerns a series of amendments to Section 7 of the Clayton Act passed in 1950 and known collectively as the Celler-Kefauver Act. This act was passed against a backdrop of a relatively poor record of unsuccessful prosecution of antitrust cases. One of the reasons for this poor record, many in Congress believed, was the inadequate wording of Section 7 of the Clayton Act. The original Section 7 prohibited "harmful" mergers and acquisitions brought about through stock acquisitions. Although stock acquisition was the primary method of acquisition at the time of the passage of the law, it had long since ceased to be the preferred method by the 1940's. Instead mergers and acquisitions were accomplished via asset acquisitions and these were not subject to Clayton prohibitions. Consequently, relatively few cases were successfully prosecuted under these provisions. This was notwithstanding what many at the time saw as a dangerous trend in the accumulation of economic power through vertical and horizontal acquisitions after World War II.

Congress, fearing the economic concentration fostered by this "loophole," moved to plug the leak through the passage of the 1950 amendments. As reported by Scherer (1980), the principal substantive effects of the act were its removal of the asset acquisition loophole, its changes in wording to bring non-horizontal mergers under the purview of the law, and its clear signal of Congress' desire to see a more vigorous antimerger program implemented.

### Antitrust Definitions And Distinctions

Antitrust law involves a wide variety of terms, concepts, and theories adopted primarily from the legal and economic arenas. Because many of the philosophies and arguments of antitrust are expressed in terminology with meanings unique to these two disciplines, a brief review and explanation of selected, frequently used terms and concepts is in order.

#### Judgment Approaches

The courts generally take one of two distinct paths in deciding antitrust issues. One involves a "per se" ruling, the other a "rule of reason" procedure.

#### "Per Se" Judgments

This type of judgment is tendered in a limited type of antitrust case in which the court determines that there is no defense for the conduct in question; that is, the conduct is illegal "per se." Under a "per se" ruling, there is no need to examine the purpose or justification for the actions of the defendant, the plaintiff must merely demonstrate that a particular conduct occurred and that it fell within the class of those forbidden practices that are "so plainly anticompetitive (National Society of Professional Engineers v. U.S., 435 U.S. 679, 1978)" that they are subject to the "per se" rule. Justice Black, as reported by Singer (1981), expounded on the rule in the following manner:

. . . there are certain practices which because of their pernicious effect on competition and lack of any redeeming virtue are conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise

harm they have caused or the business excuse for their use. This principle of 'per se' unreasonableness not only makes the type of restraints which are proscribed by the Sherman Act more certain to the benefit of everyone concerned, but it also avoids the necessity for an incredibly complicated and prolonged economic investigation into the entire history of the industry involved, as well as related industries, in an effort to determine at large whether a particular restraint has been unreasonable--an inquiry so often fruitless when undertaken (Northern Pacific Railway Co. vs. U.S., p. 5, 1958).

The "per se" rule found its initial voice in the Sherman and Clayton Acts identifying offenses for which there were no rational defenses. As reported by Scherer (1980) these offenses generally included ". . . all agreements among competing firms to fix prices, restrict or pool output, to share markets on a predetermined basis, or otherwise directly to restrict the force of competition (p. 496)."

However, the instances of cases in which "per se" rulings are applied without inquiry into the motive of the defendant are relatively rare. For example, the behavior of the court varies when judging "per se" violations of the restrictions against "tying arrangements" versus other types of "per se" offenses. Singer (1981) contends the ". . . Court appears to be stating the following equation for finding tying arrangements 'per se' violations of the antitrust laws: 1) economic power in the market for the tying goods, plus 2) substantial commerce in the tied goods, equals 3) a "per se" violation of the antitrust laws (p. 109)." He further suggests that when, ". . . this apparently straightforward "per se" equation is applied by courts to cases involving tying arrangements, a brief answer is seldom forthcoming. Indeed, the evidence required for part (1) of the equation

suggests a discussion of the available economic evidence in what might appear to be a 'rule of reason' approach (p. 109)."

#### "Rule of Reason" Judgments

Unlike "per se" violations, there are many contested competitive behaviors that have to be judged on the basis of the motive of the accused party and/or in consideration of the effect a particular action or behavior will have on other competitors. Following this approach, the courts, according to Scherer (1980), ". . . undertake a broader inquiry into facts peculiar to the contested practices, their history, the reasons they were implemented, and their competitive significance (p. 497)."

Chief Justice White, in his opinion for the Standard Oil Company of New Jersey vs. United States (1911), gave voice to the "rule of reason" in his decision aimed at the government's urging that all contracts or combinations in restraint of trade be considered illegal "per se." Singer (1981) recounts that Chief Justice White denied that every contract or combination in restraint of trade was illegal; rather, only unreasonable restraints of trade were unlawful under the Sherman Act:

In substance, the propositions urged by the government are reducible to this: That the language of the statute embraces every contract, combination, etc., in restraint of trade, and hence its text leaves no room for the exercise of judgment, but simply imposes the plain duty of applying its prohibitions to every case within its literal language . . . the construction which we have deduced from the history of the act and the analysis of its text is simply that in every case where it is claimed that an act or acts are in violation of the statute, the 'rule of reason,' in the light of the principles of law and the public policy which the act embodies, must be applied (p. 48).

The "rule of reason" approach invests in antitrust laws a degree of flexibility that would otherwise be absent under a pure "per se" doctrine. Perhaps this is what Chief Justice Charles Evans Hughes was referring to in 1933 (*Appalachian Coals, Inc. v. U.S.*, 1933) when he said ". . . as a charter of freedom . . . (the Sherman Act) has a generality and adaptability comparable to that found to be desirable in constitutional provisions (p. 53)."

Professor Oppenheim, as reported by Singer (1981), believes that both elements, "per se" prohibitions and "rule of reason" judgments, are needed to make antitrust law work:

Whereas a 'per se' rule immediately brands the operative fact embraced by it as unreasonable, the Rule of Reason opens the way to reliance upon a broad range of discretion in weighing the evidence of defenses of justification compatible with the purposes of the antitrust statutes. The Rule of Reason operates through a process of inclusion and exclusion in a case-by-case consideration of all the facts. The 'per se' illegality doctrine operates by converting predetermined single-fact categories into fixed rules of law (p. 49).

However, it is evident from discussions in the next chapter that there is a great deal of disagreement concerning which of the doctrines should apply to different situations.

#### Approaches to Analyzing Antitrust Behavior

Another area of controversy among economists and others concerns the most appropriate type of evidence for analyzing antitrust behavior. One suggested approach is based upon classical economic models and theory (classical economic theory approach). A second approach for analysis relies upon analysis of a variety of observable characteristics present in the industries and/or markets of suspected antitrust violators (conduct-structure-performance approach). Each of these

alternative methods for examining antitrust matters is explained in greater detail below.

#### Classical Economic Theory Approach

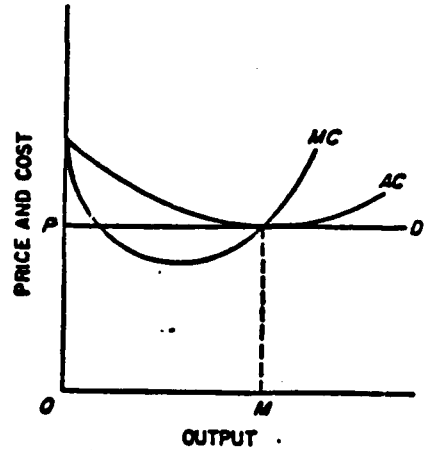
This approach to antitrust analysis is based upon the foundation models of competition from classical economic theory. Adherents of this methodology for analysis are generally referred to as coming from the "Chicago School," because of the strong support for this approach that seems to emanate from the University of Chicago. There are three basic microeconomic models that researchers and theorists from this school use in analyzing antitrust situations: 1) Pure Competition; 2) Monopoly; and 3) Consumer Welfare. Each of these models is depicted in Exhibit 1-1 on p. 20. Bork (1978) believes that economic theory based on these models is an attempt to relate the structure of an industry to its performance, and performance to the goal of consumer welfare.

Pure Competition. As described by Scherer (1980), pure competition is an essentially structural concept of competition in which ". . . an industry is said to be competitive (or more precisely, purely competitive) only when the number of firms selling a homogeneous commodity is so large, and each individual firm's share of the market is so small, that no individual firm finds itself able to influence appreciable the commodity's price by varying the quantity of output it sells (p. 10)." The model shown in Exhibit 1-1A represents a firm in a competitive industry and, as described by Singer (1968), as one in equilibrium. That is, the demand curve (or average revenue curve) coincides with the marginal revenue curve and the following condition holds:  $P = MC = MR$ .

EXHIBIT 1-1: CLASSICAL ECONOMIC MODELS FOR ANTITRUST ANALYSIS

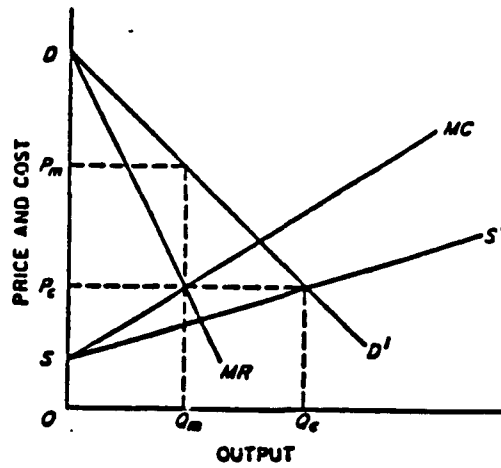
1-1A FIRM IN PURE COMPETITION  
( $P = MC = MR$ )

(Source: Singer, 1968, p. 16)



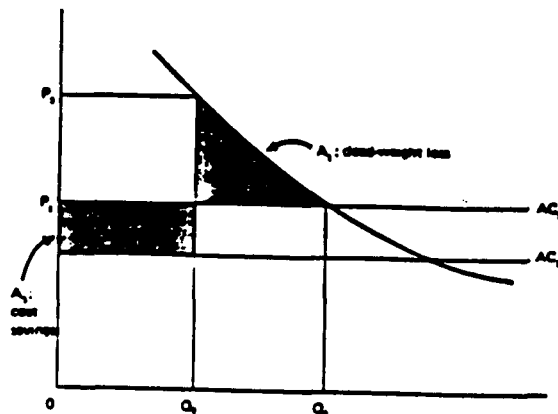
1-1B FIRM IN PURE MONOPOLY  
( $P > MR = MC$ )

(Source: Singer, 1968, p. 16)



1-1C EFFECTS ON CONSUMER WELFARE  
OF A MERGER THAT RESTRICTS  
OUTPUT AND CUTS COSTS

(Source: Williamson, 1968, p. 21)





This suggests that the firm involved in pure competition will continue to produce until it reaches a point at which its marginal costs and marginal revenues are equal to one another and to the price.

Monopoly. This is a competitive situation that Austin (1976) describes as having a single producer with a unique product that has no close substitutes. In other words, the pure monopolist is also the industry. The model in Exhibit 1-1B represents the monopolist firm (and industry). In this situation, as was also true for pure competition, the firm will produce a level of output that equates marginal revenue and marginal cost. However, in the monopoly situation the price will be greater than the point at which  $MR = MC$  and output will be restricted (i.e., less than the firm could and would produce in a pure competition environment). This situation and the manner in which a firm has achieved the status of a monopoly is of great concern to antitrust enforcers.

Consumer Welfare. This model of competition describes a trade-off choice between productive efficiency and allocative efficiency. Exhibit 1-1C represents Williamson's (1968) view of the effect on consumer welfare of a merger that restricts output and cuts costs. As explained by Bork (1978), Williamson's graph ". . . compares the 'dead weight' loss (the amount above costs that consumers would be willing to pay for the lost output) to the gains to all consumers of cost reductions resulting from the merger (p. 108)."

Bork further suggests that the Consumer Welfare Model can be used to evaluate all antitrust problems: "The existence of these two

elements [ed. note: allocative inefficiency and productive efficiency] and their respective amounts are the real issues in every properly decided antitrust case. They are what we have to estimate--whether the case is about the dissolution of a monopolistic firm, a conglomerate merger, a requirements contract, or a price-fixing agreement (p. 108)."

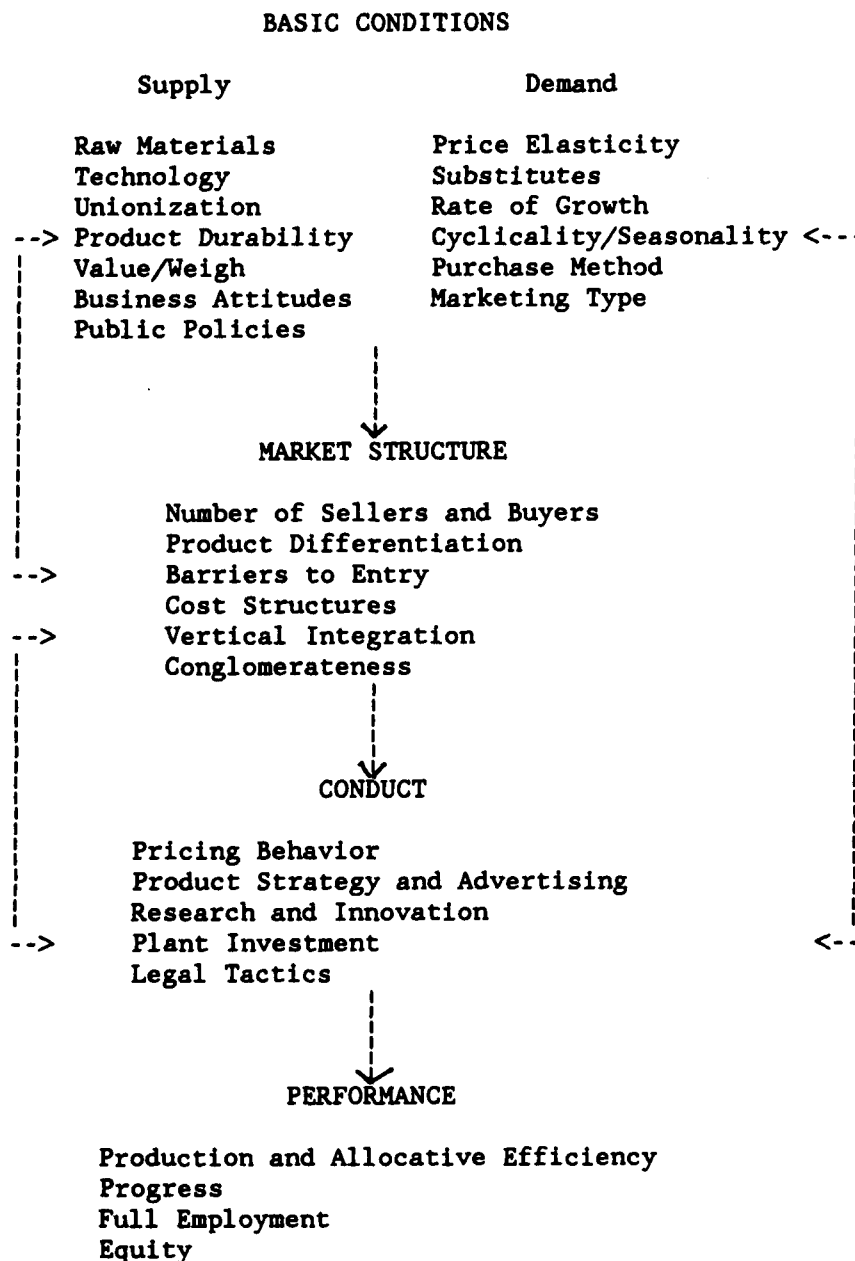
However, not all economists, judges, lawyers, lawmakers, and others would agree that this model is useful in evaluating antitrust matters. Williamson himself refers to the diagram in Exhibit 1-1C as a "naive model" and suggests a number of qualifications. Since it is used with some frequency by antitrust analysts, it is included here for explanation purposes.

#### Conduct-Structure-Performance Approach

A descriptive model of industrial organization analysis developed by Mason during the 1930's and reported by Scherer (1980) is shown in Exhibit 1-2. This model attempts to show the attributes or variables that influence economic performance and the interrelationships between them. The model suggests that performance in an industry or market is dependent upon the conduct of sellers and buyers in such matters as pricing policies and practices, overt and tacit interfirm cooperation, product line and advertising strategies, and so on. Conduct, in turn, depends upon the structure of the relevant market as described by a series of variables such as the number/size of buyers and sellers, the identification and measurement of significant barriers to entry, and the degree of vertical integration of the firms. Further, the structure of the market in which a firm competes is likely to be closely related to the basic conditions associated with supply and demand.

## EXHIBIT 1-2

## A MODEL OF INDUSTRIAL ORGANIZATION ANALYSIS



Source: F.M. Scherer, Industrial Market Structure And Economic Performance, Second Edition, (Rand McNally College Publishing Company), p. 4.

Austin (1976), elaborating on the conduct-structure-performance model, indicates that the ". . . style of inquiry is initiated deductively, then supplemented by efforts at empirical confirmation.," he contends further that the ". . . accepted thread of analysis is that the structure of the market determines conduct and conduct determines performance (pp. 2-3)." An example of this causation chain is offered by Mueller (1976), ". . . high concentration and high barriers to entry (both structural features) are said to be conducive to price fixing (a form of behavior or conduct), which leads to artificially inflated prices and profits (an aspect of industry performance [pp. 90-91])." Consequently, according to proponents of this approach, evidence based upon the variables associated with the conduct-structure-performance of an organization, its markets, and its industry should be the basis for antitrust analysis.

"Structuralists" are another group of researchers/theorists from the industrial organization area, and, although supportive of the basic theme of the conduct-structure-performance model, they subscribe to a model of analysis based upon simpler relationships. That is, structuralists like Bain (1959) and Mueller (1976) believe that the key relationship for investigation is based on the structure-performance dichotomy. Their approach disposes of conduct variables as nonessential and overly complex for researching and understanding the actions of industrial organizations. Instead, Bain stresses the link between market structure and economic performance as being highly indicative of an organization's likely performance. This "structuralist" school is further described by one of its key supporters, Mueller (1976):

. . . this school of thought considers the basic structural contours of an industry so significant an influence on the conduct of the individual firms in it that they would, in the last analysis, give it decisive weight in determining whether an industry is likely to prove effectively competitive over the long run. For example, if a particular merger is shown to have adversely affected the industry's structure--to have increased concentration, increased product differentiation, or raised barriers to entry--the structuralists would not excuse it on a showing of either good conduct or good performance--or a showing of both good conduct and good performance. They would take the position that, the compelling pressures of the structural factors being what they are, the long-run probabilities are preponderantly against any serious chances for the long run survival of effectively competitive conduct and performance in an anticompetitively structured industry (p. 92).

Thus, Muller and other structuralists, ask that organizations be examined and judged largely on the basis of industry structure indices.

#### Workable Competition Approach

The concept known as "workable competition" has received a fair amount of attention in the antitrust literature. It attempts to overcome the inherent weaknesses associated with the pure competition model. Specifically, Austin (1976) cites charges that the pure competition model is too static and abstract to provide guidance in the real marketplace. Although the definitions of "workable competition" vary widely (Warren, 1975, cites four different approaches to the concept), Austin (1976) seems to be speaking for many economists in describing it as a situation in which ". . . no one seller, or group of sellers, has the power to control prices by selling less and charging more (p. 1-5)." In addition, he recognizes:

. . . that workable competition involves value judgments, economists nevertheless agree that the general criteria are clustered around market structure, conduct, and performance. The Report of the Attorney General's National Committee to Study the Antitrust Laws lists ten factors that determine

workable competition: (1) the number of effective competitive sellers; (2) the opportunity for entry; (3) independence of rivals; (4) predatory preclusive practices; (5) rate of growth of the industry or market; (6) character of market incentives to competitive moves; (7) product differentiation and product homogeneity; (8) meeting or matching the prices of rivals; (9) excess capacity; (10) price discrimination (pp. 1-6).

Others view "workable competition" a bit differently. For example, Mueller (1976) contends that it represents a branch of the "performance" approach:

In this view, the antitrust authorities and the courts should go to the end of the chain and examine directly the matter that's really of primary interest to society, namely performance. . . . The premise here is that an industry's structure and conduct, insofar as they are socially relevant at all, are to be inferred from its performance, not the other way around. The idea, in short, is that 'by their fruits ye shall know them' (pp. 94-95).

Consequently, although the term "workable competition" is frequently used in conjunction with antitrust issues, there appears to be little agreement as to the exact nature of the concept or its usefulness.

#### Delimitations

There are a number of delimitations that help define the boundaries of this study. The first concerns the focus of analysis. The study is an evaluation of judicial opinions in antitrust cases and does not attempt to analyze all of the economic arguments that might be included in a case. It is assumed that the opinion, in part, reflects the plaintiff and defendant arguments that had the greatest impact on the justices rendering the decision in the case. Nor is the study aimed at evaluating judicial opinions in every type of litigation. There is no attempt to evaluate the economic content of any cases other than those specifically identified as antitrust cases.

This study is also bounded by time and court structure constraints. That is, only those cases which reached decision between 1940 and 1987 at the federal level (district, appellate, and/or Supreme court) are included. Consequently, there are no state antitrust cases represented in the study. These were excluded primarily because each state, or private individual bringing suit at the state level, is operating under a unique set of laws that may or may not lend themselves to comparability across all of the states. The lack of comparability makes generalization of results very difficult.

Further, no effort was made to specifically include Federal Trade Commission (FTC) antitrust actions. Since FTC actions are handled in a manner that is very different from those that are adjudicated through the court system, they are outside the focus of this study. In addition, most FTC antitrust actions occur within a very narrow segment of the antitrust laws (primarily Robinson-Patman Act violations) and, consequently, do not lend themselves to the kinds of questions addressed in this study. Those FTC cases that are a part of the study sample, represent FTC decisions that have been appealed to the court system. The content in these cases focuses on antitrust violations and the cases are treated like other antitrust cases in the study.

#### Limitations of the Study

There are three primary limitations to this study that also have the potential to limit future research attempts in the antitrust field. The limitations might be generally classified into the following categories: accessibility, technology, and resources. These are briefly discussed below.

### Accessibility Problems

There are a variety of problems associated with accessibility to information needed for research. Gaining access to the case opinion computer data base presents one obstacle. There are only two comprehensive legal data bases of federal case opinions, WESTLAW and LEXUS, and the firms which own these data bases charge on a per line basis for their use. Unfortunately, grants and discounts aimed at facilitating use of the data base services are not readily available to non-law school researchers. Use of the data base without benefit of grant is, therefore, quite expensive.

Further, the access to legal data bases is normally limited to on-line or hard copy printouts of the case opinions. However, this study required a downloading from one computer system onto disks and then uploading these disks onto another computer system for processing. It was only after a special request for a grant and through the generosity of West Publishing Company that this research project could be completed on a limited sample of cases. Other, non-computer legal data bases exist, but their use presents other difficulties that are discussed in the technology section below.

Another problem of accessibility concerns the underlying cases which give rise to the case opinion. Complete texts of the case transcripts for cases dating back to 1940 are not readily available and are not in computer form. Consequently, if one wished to do a computer analysis of the original transcript that gave rise to an opinion, this task would represent a formidable research challenge. Perhaps more recent methods in transcribing case transcripts would facilitate the



study of current proceedings. However, there is still a cost problem that may put this kind of analysis beyond the reach of many, if not most, non-law researchers. Thus, researchers desiring to further develop and extend this research effort are likely to encounter a difficult time in developing a data base for study.

#### Technology Limitations

Initially, an attempt was made to computer scan case opinions directly from law books into computer usable format. However, scanning technology is still in its infancy and presents several problems for the researcher. For example, page scanners read across an entire page of text; they cannot read columns of text. Since most opinions are presented in two column form, they must be rearranged (cut and paste) before a scanner can read them.

The cutting and pasting of opinions requires that the text of the opinion first be photocopied. The process of photocopying dulls the image and frequent erroneous readings by the scanner result. Because of these erroneous scanner readings, a line by line proofreading of each case opinion is required to ensure that the proper information exists in the data base. Each of these tasks require large amounts of time and effort, which tends to slow the research process. Improved optical scanning technology is needed before data bases can be created from law texts in an economical and timely manner.

#### Resource Limitations

The final limitation of the study identified earlier concerns time and funds constraints. Study in the antitrust field, particularly when

it involves case analysis, requires a large amount of time. For example, especially time consuming in this research project were the tasks which required the reading of eighty-four case opinions and the line by line analysis of the GENCORD computer content analysis output. Several of the case opinions contained more than 100 pages of text and very few contained less than 20 pages. In addition, the task of selecting a random sample that fulfilled the criteria was very time consuming. Many cases are reported that simply involve rulings on legal antitrust procedures and, therefore, must be disregarded. This process of weeding out involved large blocks of time.

The funds limitation associated with legal research was hinted at in the previous sections. An independent researcher, without benefit of fairly sizeable grants, is likely to find that doing research in the antitrust field may be prohibitively costly. Computers, obviously speed the research process, but they can also tend to require a heavy infusion of funds. This is especially true when research involves the use of proprietary data base.

#### Overview Of The Study

This brief review of the purposes of the study and of the principal antitrust laws serves as an introduction to the material in following chapters. Chapter Two examines antitrust enforcement. It also includes a review of selected antitrust literature and a discussion of the primary issues arising from the role courts have assumed in the development and enforcement of antitrust law. Several antitrust "schools of thought" are compared and contrasted as well.

Chapter Three specifies the sampling procedures and research methodologies employed in the study. The analysis approach is also explained in this chapter and a set of eleven unique measures of economic content are introduced. The fourth chapter is devoted to a discussion of the findings resulting from the application of the procedures and methods described in Chapter Three.

The results of the research are examined in Chapter Four. This chapter is organized around the review and interpretation of the tests of the six hypotheses detailed on page 8. Finally, Chapter Five summarizes the study results, delineates the conclusions that might be drawn from the results, and suggests areas for future economic/antitrust research. In addition, the implications of the research results for selected antitrust audiences are discussed.

## CHAPTER II

### REVIEW OF ANTITRUST LITERATURE

This chapter examines several aspects of antitrust literature to provide a background for the study. Antitrust enforcement is the first topic considered. A short explanation of the enforcement agencies and procedures is followed by a historical overview of antitrust enforcement efforts. This review extends from the passage of the Sherman Act through the current time. The historical review is followed by a discussion concerning the purpose and intent of antitrust laws. Finally, the chapter concludes with a thorough explanation of each of the primary philosophical schools of thought concerning antitrust and its implementation.

#### Antitrust Enforcement

The enforcement of antitrust laws is often complex and difficult to understand by the non-legal layperson. An explanation of the primary elements of enforcement and of the categories of antitrust actions will lend some degree of insight into the process.

#### Enforcement Agencies

Cases may be brought to court against an antitrust offender by either the government enforcement agencies or by private "persons." This section is devoted to a discussion of the government agencies and a subsequent section will look at private plaintiffs.

Neale (1970) believes that the real enforcement of antitrust laws is in the hands of lawyers who advise business firms and other types of

organizations concerning activities which might come under the auspices of the antitrust laws. Intent on protecting their clients from potentially expensive and prolonged litigation, it is these lawyers who examine case law for policy and doctrine developments in order to keep their employers' business policies within these lines.

However, there must also be public enforcement to ensure adherence to the law and to bring wayfarers back into compliance. The two government agencies entrusted with enforcing antitrust laws at the federal level are the Antitrust Division of the Department of Justice and the Federal Trade Commission. Individual states also have antitrust offices, usually within the state's Attorney General's office, however, the activities of these is beyond the scope of this study.

#### Antitrust Division

The Antitrust Division of the Department of Justice is largely responsible for the enforcement of the Sherman Act and for Section 7 of the Clayton Act. It alone is given criminal jurisdiction for prosecuting offenses that represent "serious and significant infringements of that Act (Neale, 1970, p. 373)." Section 4 of the Sherman Act also gives the Department of Justice the duty of instituting civil proceedings to prevent and restrain any violations of the Act. The Antitrust Division is somewhat less active regarding sections other than Section 7 of the Clayton Act, taking action only when charges constitute a factor in a broader picture of Sherman Act violation.

The Antitrust Division also has among its tasks both the detection and selection of antitrust offenses that will receive its attention.

Detection is often, but not exclusively, the result of complaints from the public or from business people who claim injury as a result of the practices of other businesses. Anyone, including lawyers and economists from within the Division itself, can lodge an antitrust complaint.

Selection involves determining which of these complaints receive the Division's attention, given its limited resources. This latter decision area is often the result of policy considerations developed by staff economists, lawyers, and administrators, and by others outside the Division (e.g., politicians, economists, business people, etc.).

Marcus (1980) reports that prior to the 1940's there was little enforcement of antitrust laws directed by the Antitrust Division. However, enforcement activities increased dramatically in the late 1930's as the Division became more fully staffed and was put under the leadership of Thurmond Arnold. Marcus lends insight into the manner in which the Division has been managed since the 1940's:

Over many years, with a few exceptions, there has not been a wide variation in the yearly number of antitrust cases brought by the Department of Justice through its Antitrust Division. Variation has existed in the importance of the cases brought, in the emphasis on the type of case to which the Division has allocated most of its endeavors, and in whether criminal or civil suits are given the most stress. This may depend upon the views of the Attorney General or on those of the Assistant Attorney General in charge of the Antitrust Division, or, on the prevailing political or judicial climate (p. 17).

Both Marcus (1980) and Neale (1970) decry the lack of continuity that seems to plague the Antitrust Division caused by the many changes in its leadership. Frequent leadership changes often lead to changes in policy direction and consequently have an impact on the number and types of prosecutions brought.

### Federal Trade Commission

The Federal Trade Commission was established by the 1914 Federal Trade Commission Act to watch over competition and competitive practices in industry. It is an administrative commission of the federal government consisting of five persons appointed by the President. Like the Antitrust Division, it has a large staff, including economists and lawyers, who review business practices. Some of these practices concern antitrust, while many others do not. In respect to the area of economic competition, the Commission derives its mandate from Sections 2, 3, 7, and 8 of the Clayton Act. Section 5 of the Federal Trade Commission Act expands these powers giving the Commission the charge to attack anticompetitive practices.

Neale (1970), for example, informs us that the Commission is responsible for "unfair methods of competition in commerce" and for "unfair or deceptive practices in commerce." These "methods" and "practices" might cover antitrust offenses relating to restrictions or distortions of competition, as well as many other types of business activities which have the potential to mislead or deceive the consumer.

The work of the Federal Trade Commission in the antitrust area relies, like the Antitrust Division, on complaints from the public and from businesses and organizations about alleged infringements of the law. Neale (1970) indicates that:

It also has as a division of its staff a Bureau of Industrial Economics whose job it is to maintain a vigilant watch over the American economy from the point of view of its competitiveness, its degree of concentration and so on. The investigations of this Bureau, like those of the economists in the Department of Justice, lead the commission from time to time to concentrate as a matter of policy on particular aspects of the economic scene (p. 385).

Once a complaint has been registered and the Commission concurs that the issue falls under its jurisdiction, it may decide (but is not compelled) to issue a complaint.

Complaints are prosecuted by the Commission's lawyers and defended by the businesses lawyers before an Administrative Law Judge. The Administrative Law Judge is charged with trying the case, handing down an initial decision which includes the findings as to the facts of the case, the conclusions of the relevant law, and an appropriate "cease and desist" order. "Cease and desist" orders are roughly equivalent to the decision which the courts hand down at the end of a civil antitrust suit. They are usually in the form of injunctions to the companies concerned to abandon specified competitive practices. These injunctions then have the force of law. Commission orders do not award damages, consequently district courts have been given original jurisdiction over civil penalty proceedings.

The initial orders of the administrative judge may be appealed to the Commission and further to the courts of appeals, if the charged party is not satisfied with the results. The courts of appeals have jurisdiction to review and to affirm, modify, or vacate FTC orders. However, courts of appeal are reluctant to act against FTC orders where its findings are supported by evidence and the rulings are consistent with the governing statutes.

#### Private Enforcement

The Clayton Act, sections 4 and 16, governs private suits permitting any "person" to recover damages for antitrust injury and/or to obtain injunctive relief against threatened harms. Private persons are



defined by both the Sherman and Clayton Acts to include natural persons, corporations, partnerships, associations, and so on, including even municipalities under the definition.

In recent times, according to Marcus (1980) and substantiated by numerous government reports (see for example, U.S. Administrative Office of the U.S. Courts, Annual Reports, 1940-87), the number of private suits has far exceeded the number of government suits. Private suits have increased several fold since 1940, while the incidence of government suits has remained relatively stable, rarely exceeding 100 cases (see Annual Report of the Administrative Office of the U.S. Courts, 1980). Posner (1980) indicates that very few private actions seem to have been brought before 1941 and that only 669 private cases were brought between 1941 and 1949. This compares to an average of 250 cases per year between 1950 and 1959 and to an average exceeding 1200 cases through the 1970's and early 1980's. Most of these suits have charged antitrust violations under the Sherman Act rather than under other antitrust laws for reasons that will be discussed in the "Remedies" section below.

Posner (1980) attributes the rise in the number of private suits to four important causes: 1) the broadening of antitrust liability by decisions of the Supreme Court during the 1960's, 2) a corresponding reduction in the certainty with which the private bar can evaluate the lawfulness of conduct, making litigation necessary, 3) a series of rulings on procedural matters that have favored antitrust plaintiffs, and 4) changes in the rules with respect to class actions. However, he recognizes that there may be other causes for the increase as well.

Whatever the cause, the approximately nine percent rate of growth in private cases during the 1960's and through the 70's and 80's has been substantial.

Partially in reaction to the potential of private cases swamping the court system and partially because of problems of open-ended liability the courts established the concept of "standing to sue." Although not required, the law encourages that private plaintiffs have "standing to sue" in antitrust matters. "Standing" is defined by Areeda (1974) as ". . . the ability to demonstrate significant threat of injury to himself (p. 57)." Marcus (1980) describes "standing" as meaning the interest in the matter before the court that entitles the plaintiff to maintain the suit. He reports that the Supreme Court views "standing" as concerning ". . . apart from the 'case' or 'controversy' test, the question whether the interest sought to be protected by the complainant is arguable within the zones of interest to be protected or regulated by the statute or constitutional guarantee in question (Data Process Service v. Camp, 397 U.S. 150, p. 153, 1979)."

The courts have tried to develop a balance in respect to private suits. They seek to avoid unnecessary or nuisance suits that, if not discouraged, would tax the resources of the court, while concurrently they attempt to see to it that victims are compensated and future violations are deterred. For a time, according to Marcus (1980), several courts, eschewing the "windfall" nature of private suits, went so far as to require private antitrust plaintiffs to plead and prove injury to the public occurring from the alleged violation in order to

be able to maintain an action. The Supreme Court, however, has rejected such requirements.

At the same time, the courts also recognize the limited resources and capacities of the governmental agencies to enforce the antitrust laws of the states and nation. Private suits fill the gaps created when the government enforcement units are unable or unwilling to give their attention to specific antitrust matters and for this reason are a desirable feature of the antitrust legal system. In this sense, Marcus (1980) informs us, ". . . the ordinary plaintiff sues to vindicate his interest, but the public benefits whenever an antitrust violation is brought to light (p. 136)."

#### Antitrust Charges

Antitrust cases can be classified in a variety of ways. One way is based on the nature of the charge against the defendants. Thus, a case might be classified as either criminal or civil. The importance of the distinction between the two types of cases resides in the types of punishments or remedies that might be applied to those found guilty of the violations and perhaps to the deterrent effect of the antitrust laws to which criminal punishments are attached.

Congress in 1890 enacted the criminal provisions of the Sherman Act and charged the Department of Justice with enforcing these. Consequently, criminal charges cannot arise out of cases brought for violations of the Clayton Act, nor for violations of some sections of the Sherman Act, or of most sections of the Robinson-Patman Act (Areeda, 1974). However, violations of sections 1 and 2 of the Sherman Act (restraint of trade and attempts to monopolize, respectively) and of

section 3 (price discrimination) of the Robinson-Patman act can be the subject of criminal proceedings.

The Department of Justice, alone, has criminal jurisdiction over the antitrust laws and must decide whether to proceed by criminal or civil action. In a criminal antitrust case, the Supreme Court has held (U.S. V. United States Gypsum Co., 1978) that "intent" is a necessary element which is not to be taken from the jury by reliance upon a legal presumption based upon proof of an effect on prices. But the court also held that ". . . action undertaken with knowledge of its probable consequences and having the requisite anticompetitive effects can be a sufficient predicate for finding of criminal liability under the antitrust laws (Marcus, 1980, p. 37)."

Neale (1970) suggests that the decision as to whether to bring civil or criminal charges (or both) has two aspects. One concerns the question of what the action is to achieve. In this regard, the criminal case seeks punishment of offenders for past offenses. Hopefully, punishment of offenders supports the law's ability to act as a deterrent (some would argue that the punishments applied have not been severe enough to constitute deterrence--see, for example, Posner, 1980, p. 320). The selection of type of prosecution may also achieve regulation of an industry so that its practices conform to antitrust policy. Regulatory remedies, seeking "improved" performance, rely on civil proceedings in which the court ". . . acts as a chancellor dispensing equity (Neale, 1970, p. 379)." Most of the biggest cases in antitrust history have been civil rather than criminal proceedings.

The second aspect of the choice between criminal and civil proceedings concerns a question of justice to those subject to the antitrust discipline, according to Neale (1970). As a practical matter, Neale contends, there is general support for the criminal provisions of the Sherman Act. However, he also believes that it is widely felt that ". . . criminal proceedings are not appropriate in cases near the borderline of the law where there may be no precedents and no reasonable expectation on the part of business that a given line of conduct is actionable (p. 379)." Neale's contention is supported by Marcus (1980) and by the Attorney General's National Committee statement which sympathetically states that the criminal process ". . . should be used only where the law is clear and the facts reveal a flagrant offense and plain intent unreasonably to restrain trade (p. 380)."

This reasoning explains why in most instances, and this has been true throughout the history of antitrust laws in the United States, the number of civil proceedings has far exceeded criminal proceedings. It also explains the reasons criminal charges are normally reserved for clearly defined "per se" situations (such as price fixing, allocation of territories or customers, boycotts, or tying arrangements) or when it appears there has been a willful violation of the law (Marcus, 1980).

#### Remedies Applied

Another category of case types relates to the remedies that are applied to antitrust offenses. A wide variety of remedies have been used in antitrust judgments. Legal remedies, seeking punishment, will normally involve a fine or imprisonment. Equity remedies, seeking to

prevent and restrain antitrust violations, give the courts the ability to take several actions: 1) forbid the continuation of illegal acts and, perhaps, 2) force the defendant to dispose of the fruits of his wrong, and 3) restore competitive conditions (Areeda, 1980, p. 55). These remedies are not designed to be punitive, nor to embody harsh measures when less severe ones will do (Timken Roller Bearing Co. v. United States, 341 U.S. 593, p. 603, 1951). Rather, they are designed to return equitable relief to the aggrieved party.

Areeda (1980) describes the wide degree of latitude courts have in choosing an antitrust remedy:

Antitrust decrees have, for example, ordered defendants to dispose of subsidiary companies; to create a company with appropriate assets and personnel to compete effectively with defendant; to make patents, trademarks, trade secrets, or know-how available to competitors at reasonable royalties or even without any royalties; to provide goods and services to all who wish to buy; to revise the terms on which defendant buys or sells; and to cancel shorten or modify outstanding agreements with competitors, suppliers, or customers (pp. 55-56).

Further, Section 16 of the Clayton Act gives private persons the ability to obtain injunctive relief against actual or threatened antitrust injuries and Section 7 of the Sherman Act permits treble damage actions. Some of the more common categories of remedies will be discussed in greater detail below.

### Injunctive Relief

Injunctive judgments are statements and orders by the court that either compel or prohibit specific acts or performances of conduct. Examples of injunctions are the "Automatic Stays of Mergers" which prevents consummation of merger until the government has had an

opportunity to review its effect; cease and desist orders which compel the immediate cessation of a specified conduct; and "go-and-sin-no-more injunctions" which increase the cost of successive violations.

Frequently, according to Marcus (1980) the result of an injunctive judgement may go beyond an individual firm by imposing a regulatory code of business conduct upon an entire industry or a major part of an industry. Injunctive relief is an outcome most frequently applied in government cases; however, it can also be applied in private antitrust cases as well.

#### Divorcement, Dissolution, and Divestiture

Marcus (1980) defines three of the types of relief granted by courts in antitrust cases in the following manner:

Dissolution may be considered to have two meanings. One is the breakup of a combination of different entities involved in an antitrust violation, and such dissolution may require a variety of injunctive remedies. The term also may be used as a description of a remedy designed to terminate the existence of an antitrust violator. Although such remedy has been applied to corporations, for the most part it has been directed at trade associations.

Divorcement is an apt term where relief seeks a breakup of integration, although it seems broad enough to include divestiture.

Divestiture is the term commonly applied to the forced relinquishment of specific property. (pp. 701-714)

He goes on to explain that, whereas none of these forms of relief are common occurrences, divestiture provisions are more likely to be a part of an antitrust judgement than the other two, particularly in merger cases.

Although there is no prohibition against the use of divestiture in private antitrust suits, there tends to be a reluctance on the part of

courts to grant such relief. Both the FTC and the Department of Justice have authority to use divestiture as a remedy in merger cases. Often the FTC or courts will issue decrees, in lieu of divestiture orders, which ban a firm from future acquisitions for a specified period of time (often 10 years). These provisions have been negatively labeled as "regulatory" by some in the Antitrust Division (Donald Baker, Deputy Assistant Attorney General, before Eighth New England Antitrust Conference, Nov. 1, 1974), while others support their use to deter mergers by suspect acquirers (Marcus, 1980).

#### Consent Judgments

Nearly 80 percent of government-initiated civil suits are settled by consent decree according to a report in the Trade Regulation Reporter, (P50137, 1972). These settlements are negotiated between the Department of Justice and the defendant and leave unresolved the question of guilt versus innocence. Rather, there is a simple agreement that the defendant agrees to comply with the government's judgement.

For a defendant, the advantages of a consent decree include the avoidance of a potentially costly trial, the adverse publicity that might accompany such a trial, and the inability of private plaintiffs to use evidence from a trial in a treble-damage action. The disadvantages to the defendant involve any restrictions that might be placed on its business conduct that might not apply to its competitors. The government benefits also by the avoidance of taking a case to trial, but with the benefit of applying restrictions to a firm's conduct. Posner (1980) estimates that the budget of the Department of Justice would have to be increased several-fold, if it were forced to litigate all of the



cases (see Table 2-1 on p. 45). The negative aspect of consent decrees and judgments is that it takes away benefits from private plaintiffs pursuing Section 5, Clayton Act (treble-damage), lawsuits (see next section).

The counterpart of the consent decree in criminal antitrust lawsuits is the nolo contendere plea. Neale (1970) explains the nature of the plea in the following manner.

This Latin phrase means, broadly speaking, 'I am not going to dispute what you say'. It is thus in many respects equivalent to a plea of guilty in English courts. The American court will, on this plea, exact fines or other penances as if the case had been fought and lost by the defence. A plea of nolo contendere, however, has the substantial advantage to the accused that it does not constitute an admission of any particular item of the Government's charges and no evidence is brought by the Government before the court. Thus the accused company is protected against the possibility that the government charges, having been found proved in detail and having become, in effect, the court's finding of fact, will be seized upon by private litigants, who consider themselves damaged by the offenses concerned, as a basis for bringing a treble-damage action against the offender (p. 380).

The government, however, need not accept a plea of nolo contendere when it views the offenses as flagrant and/or the chances of conviction as highly probable.

#### Money Damages

Under both the Sherman Act and the Clayton Act, any private person " . . . injured in his business or property by reason of anything forbidden in the antitrust laws . . . shall recover threefold the damages by him sustained, and the cost of suit, including a reasonable attorney's fee (Areeda, 1980, p. 68)." The treble damage remedy aimed at compensating private persons for their injuries, gives these persons

TABLE 2-1  
 CONSENT JUDGMENTS IN CIVIL ANTITRUST CASES  
 BROUGHT BY THE DEPARTMENT OF JUSTICE

Period in Which Case Was Instituted	All Civil Antitrust Judgements in Favor of Government	Consent Judgments	Percentage of Consent Judgments
1890-1894	4	0	0
1895-1899	4	0	0
1900-1904	4	0	0
1905-1909	10	3	30
1910-1914	40	19	50
1915-1919	17	15	88
1920-1924	27	20	74
1925-1929	39	33	85
1930-1934	15	12	80
1935-1939	26	17	65
1940-1944	50	36	72
1945-1949	81	67	83
1950-1954	70	58	83
1955-1959	90	71	79
1960-1964	115	93	81
1965-1969	48	43	90
1970-1974	115	109	95
1975-1979	31	25	81
Total	786	620	79

Source: Richard A. Posner. A Statistical Study of Antitrust Enforcement. 13 Journal of Law And Economics 365, 375 (1970).

a great incentive for "enforcing" antitrust laws. The result is (theoretically) that public enforcement, which tends to be very selective, is supplemented by private enforcement, which increases the likelihood that a violator will be detected, increases the penalties that must be paid, and, therefore, decreases the likelihood of illegal behavior.

These potential benefits are counteracted by what some see as harmful or ineffective elements of the treble damage law suit. Marcus (1980) reports the negative view of private antitrust actions held by some lower court judges tends to create difficulties for these suits. Private litigants must prove three things in their suits: first, they must prove the fact of the damage; second, they must prove the amount of the damage; and finally, they must prove a violation of the antitrust laws.

Neale (1970) corroborates the negative view of the courts in regard to the treble-damage actions. He indicates that early decisions under the antitrust laws maintained "rigorous standards" concerning proof of damages. There has been, according to Neale, a liberalization of attitudes by the courts. This is evidenced by calculations showing that up to 1940 plaintiffs succeeded in recovering damages in fewer than 10 percent of the actions brought, whereas, since 1940, plaintiffs have won over 40 percent of the cases (p. 399). This success rate might also account for the large number of private cases that have been filed since 1940.

Neale (1970) believes that private litigation for treble damages is further limited by a variety of factors. Included among these

factors is the difficulty of private litigants to demonstrate an antitrust offense that is damaging to the public in general and one that also has specific damages to the plaintiff. A further limitation is the expense associated with bringing suit, particularly against larger defendants. Finally, he suggests that treble-damage actions tend to rise in particular parts of the antitrust fields, usually where the government has already successfully prosecuted and established the illegality of practices which have had a negative impact on a number of small businesses.

This government action is important in relation to treble-damage suits because Section 5 of the Clayton Act permits certain judgments and decrees in government cases, civil or criminal, to be admissible in private suits as prima facie proof of certain facts. The effect of this is that some private litigants are supported in their actions while others, in areas of antitrust not supported by government litigation, are less able to pursue their actions.

#### History of Antitrust Enforcement

There are several elements that are important to the understanding of the development of antitrust in the United States. One of these is the social-political-economic environment that frequently acts as the catalyst for change. A second important element of antitrust enforcement is the historical trends in judicial decisions and interpretations. A final element focuses on the manner in which the agencies charged with enforcing antitrust laws have approached this task over time. The brief historical overview below integrates these three elements.

The judicial rulings are particularly important and will serve as the centerpiece of this review. This emphasis is used because, whereas the Congress of the United States develops the framework for the body of antitrust laws, it is the courts that interpret the laws and give them specific meaning. This thought is supported by Sherman's (1978) statement: "The Sherman Act was more an expression of sentiment for an objective than a clear instruction for reaching it, and it was slow to have effect (p. 29)." The act was given "effect" only after a body of judicial interpretations was added to the force of the legislation.

It is unrealistic to assume, however, that once a law or statute is given a particular meaning through judicial interpretation, its meaning cannot undergo change over time. To the contrary, antitrust law has experienced a great number of changes. These changes are the result of constantly changing conditions in the political, social, and/or economic environment of the country; new judges with different interpretations of the law; different philosophies in administering the laws; and/or new legislation passed by Congress. Consequently, all of the elements discussed in the first paragraph of this section become important to the understanding of the law.

Handler (1973) recognizes five general periods of antitrust adjudications: 1) the period before 1911; 2) from 1911 to 1920; 3) the years of normalcy and inaction, 1921-1937; 4) the New Deal days through the forties (1938-1949); and 5) from 1950 to 1973. Other writers organize the history of antitrust into more or fewer time periods than does Handler and often vary the power of the microscope lens they use to examine individual periods. Van Cise (1976) and Hofstader (1965) for

example, recognize three general time periods, while Stocking and Watkins (1951), and Mueller (1983) fragment the time periods into much more finite periods of activity. Because of its conciseness and the many time references in the literature roughly corresponding to Handler's categorization, it will be used to review the enforcement history of antitrust.

#### The Formative Years

Handler's first category, pre 1911, focuses on the court's attempt to define the jurisdictional scope and the substantive reach of antitrust legislation. The political-social-economic environment that witnessed this early rise of antitrust prosecutions is described by Sherman (1978) in the following manner:

Out of the great expansion in economic activity that followed the Civil War there emerged large combinations of firms within many industries called trusts after the voting trusts that appeared in the 1880's. Reports about the ruthless abuse of the growing power of trusts were legend. Yet they could not be controlled at common law because their actions were not unambiguous offenses. Under such circumstances, with little economic knowledge to draw on and with conflicting interests to be reconciled, Congress passed the Sherman Act to initiate antitrust economic policy in America (p. 29).

Justice Harlan seems to have captured the mood of many people at the time of the passing of the Sherman Act when he wrote: "There was everywhere a deep feeling of unrest . . . the conviction was universal that the country was in real danger [from] the aggregation of capital in the hands of a few individuals and corporations controlling for their own profit and advantage exclusively, the entire business of the country (Standard Oil Co. of New Jersey v. United States, 221 U.S. 1, p. 31, 1911)." Stocking and Watkins (1951) provide evidence showing the

seriousness of the situation at the turn of the century. This evidence also supports Sherman's (1978) contention that the Antitrust Act was not immediately successful in curbing combinations:

From 1890 to 1904 no fewer than 237 corporate consolidations took place, each of regional or national compass and capitalized for more than a million dollars. Together they covered practically every important manufacturing industry and represented a gross capitalization of \$5.96 billion. The movement reached its peak in 1899 when 78 combinations were launched which issued \$1.88 billion (par value) of securities (p. 32).

It was within this turbulent environment that the Sherman Act was launched into its first era.

Einhorn and Smith (1968), describe the pre 1911 period as one in which the applicability and meaning of the Sherman Act were broadly outlined by the courts:

In rapid succession, it declared unlawful horizontal arrangements among sellers or buyers fixing prices, dividing markets and allocating customers; it outlawed concerted boycotts; it forbade vertical price agreements; it condemned stock acquisitions by major competitive factors lacking any monopoly power; it sustained recovery of the overcharge in private treble damage actions predicated on price fixing; it upheld price restrictions in patent license agreements; and put beyond the purview of antitrust restrictive conduct permitted by the laws of foreign lands in which it took place (Handler, 1973, pp. 93-94).

This suggests that the role of the early cases was to lay the foundation of antitrust. For example, a very important pioneering case was the Northern Securities Co. vs. the United States (1904) in which the use of mergers for the purpose of eliminating competition was condemned by the Supreme Court. The Court put teeth into this condemnation when, in 1911, it ordered the dissolution of the power trust (United States vs. E. I. DuPont deNemours & Co., 351 U.S. 377). These cases seemed to have a chilling effect on the trend toward industrial combination. However,

as suggested by Stocking and Watkins (1951), by this time American industry had already been transformed:

By 1905 few important lines of manufacture were free of domination by a giant corporation or by two or three such giants, operating perhaps in distinct but related branches of the industry. Combinations had taken place not only in such important industries as steel, nonferrous metals, oil, chemicals, textiles, paper, rubber, and agricultural, industrial, office and household machinery but also in many minor industries such as chewing gum, oatmeal, and sewing thread (p. 33).

The end of the period was marked by a move away from the very strict interpretation of the law in all antitrust matters that had prevailed in most early cases. This strict interpretation is illustrated by Justice Peckman's Trans-Missouri Freight Association opinion (1897) in which he found the Freight Association unlawful because Section 1 of the Sherman Act condemned every restraint of trade. The 1911 Standard of New Jersey case ushered in a new approach in which the "rule of reason doctrine" recognized the need for greater flexibility in the application of the law.

Notwithstanding the many important events and decisions of the pre-1911 antitrust period, Sherman (1978) cautions that the period was not overly prolific in respect to the number of cases prosecuted. The Department of Justice, the only antitrust enforcement agency prior to the passage of the Clayton and Federal Trade Commission Acts, brought only seven antitrust actions during President Harrison's term, eight in President Cleveland's, and three in the McKinley administration. This occurred despite the fact that industrial combinations continued their growth during much of this time. It is obvious that antitrust had not come to full flower in this pre 1911 era.



### New Legislation. New Behaviors

The Standard Oil of New Jersey case marks the beginning of this era because of the important new direction it established with its enunciation of the "rule of reason." According to Stocking and Watkins (1951), the "rule of reason" meant that ". . . 'good trusts' had little to fear from the law. Its prohibitions, under the rule of reason, would apply only to the abuse of power, not to the power to abuse (p. 36)."

Between 1911 and 1920 there were a number of critical changes in the antitrust environment. As the courts reinterpreted the antitrust laws in conformance with the Standard Oil decision (1911), and as Congress passed new legislation (i.e., the Clayton and FTC Acts) to strengthen the antitrust laws, businesses began to change their own behavior. Stocking and Watkins (1951) inform us that the United States began to see a new breed of business leaders after 1911:

. . . who shunned the bludgeoning tactics of their predecessors. But few of the new business leaders abandoned the effort to stabilize markets. They simply followed a policy of live and let live rather than one of driving out or absorbing business rivals. They joined in promoting trade associations and fostering good will through their cooperative activities. . . . This new approach to industrial stability did not sharply reverse the trend toward concentration . . . For with increasing frequency business rivals relied on trade associations rather than outright consolidation as a means of tightening control of the market. The Department of Commerce estimated that the number of active trade associations, national in scope, increased from 100 in 1900 to about 1,000 in 1920 (pp. 36-37).

Another important environmental variable during this period was the participation of the United States in World War I. As might be expected in a time of national emergency, both business and government behaviors changed. Sherman (1978) describes this time aptly:

. . . the nation was engulfed in war; financial and industrial segments of the private economy were engaged to support it. The graduated income tax had been introduced in 1913 to replace revenue lost by tariff reductions that year, and the income tax helped to finance the war effort. Centralization was fostered through the War Industries Board, which finally was given sweeping powers to mobilize the nation's resources for war. Many other governmental agencies were formed. All trust-busting efforts ceased during this period (p. 41).

Sherman is not quite correct, however, in his contention that all trust-busting efforts had stopped. Two important decisions were reached toward the end of World War I that would have a tremendous impact on antitrust after the war. Specifically, in *United States vs. United Shoe Machinery Co.* (1918) and in *United States vs. United States Steel Corp.* (1920), the Court found that the defendants, although they had combined in a single corporation 80 percent or more of some lines of business in which they were engaged, were not guilty of antitrust violations. The justices opined that under the rule of reason, however comprehensive a merger of competing corporations was, size in and of itself did not constitute a violation of the antitrust law. That is, monopoly, or at least the tendency towards it, was not a "per se" offense.

The corporation is undoubtedly of impressive size, and it takes an effort of resolution not to be affected by it or to exaggerate its influence. But we must adhere to the law, and the law does not make mere size an offense or the existence of unexerted power an offense. It . . . requires overt acts, and trust to its prohibition of them and its power to repress or punish them. It does not compel competition, nor require all that is possible (*U.S. v. United States Steel Corporation*, p. 55, 1915).

With these cases as a backdrop after the war ended, a new era of antitrust challenges would present themselves. Mueller's (1983)

description of the 1911-1920 period seems to accurately portray the mood of the country:

Until World War I there was continuing agitation for more vigorous enforcement and strengthening of the Sherman Act of 1890. In the 1912 presidential campaign each candidate--Roosevelt, Taft, and Wilson--spelled out an agenda for curbing excessive corporate economic power. The result was the enactment in 1914 of the Clayton Act and Federal Trade Commission Act. World War I changed abruptly the nation's agenda, and following that conflict, concern with these matters was set aside as the nation was promised a return to 'normalcy' (p. 20).

#### Normalcy And Inaction

As suggested by Mueller above, the decade of the 1920's did not witness a revival in the interest for antitrust enforcement that had existed prior to World War I. Rather, at war's end the main concern of government and business alike was to return the economy to private ownership and operation (Sherman, 1978). Apparently, the general public also agreed with this approach.

Thus, began what Handler, (1973) and Stocking and Watkins (1951) called the return to normalcy, and a period of time (1920-37) that Hofstader (1965) has christened "the era of neglect" in antitrust enforcement. Judicial rulemaking slackened vis a vis antitrust and was accompanied by a new surge in mergers. Stocking and Watkins (1951) report data based on a study by Willard Thorp (1941), that ". . . no fewer than 1,179 manufacturing and mining consolidations took place from 1920 to 1928 inclusive (p. 39)." They further report that the ". . . prewar peak of 78 primary mergers and merger acquisitions in 1899 contrasts with a postwar peak of 232 in 1928 (p. 40)."

Mueller (1983) states that: "During the 1920's there occurred the first concerted attack on the antitrust laws. . ." and that "By the late 1920's and early 1930's many special-interest groups urged drastic changes, if not outright repeal, of the antitrust laws on the ground that these laws shackled business initiative and that their repeal was essential to economic recovery . . . (p. 20)." Van Cise (1976) substantiates this view: "An initial two decades of trial and error in construing these laws (antitrust) had persuaded influential judicial spokesmen that he governs best who governs industry least (p. 96)." He goes on to specify the implications of this approach: "It followed that the rule of reason, as thus applied to the antitrust laws, even during temporary periods of depression, expressed increasingly what then seemed--under current commercial ethics--to be reasonable to business (p. 97)."

These changes were reflected in the cases and decisions made by the Supreme Court. Handler (1973) describes several of these cases and their outcomes:

In Trenton Potteries, Charles Evans Hughes, as counsel for the defense, vigorously argued for affirmance of the Second Circuit's determination that the rule of reason sheltered price fixing by a group controlling upwards of 80% of its market provided the prices so set were themselves reasonable. . . . At the same Term, the Court inexplicably upheld a decree as 'in harmony with law' which left undisturbed a 64% market share attained by the defendant through a series of horizontal acquisitions (United States v. International Harvester Co., 274 U.S. 693, 1927). This decision stripped the Sherman Act of effectiveness in curbing those mergers which patently jeopardized the competitive structure of industry. In Western Meat Co. (1926) and Thatcher Glass (1926), the Court broadened the loophole in Section 7 of the Clayton Act by holding that the Federal Trade Commission was ousted of jurisdiction over stock acquisitions where the stock was exchanged for assets before the final order (pp. 94-96).

Einhorn and Smith (1968) see this time as one in which the Supreme Court narrowly interpreted antitrust offenses. They cite the United States Steel Corporation (1920) and the International Harvester (1927) cases as evidence of the courts predilection to interpret the law on the basis of incidents of behavior rather than patterns of results. They also contend that with the International Harvester decision in 1927, supporting the United States Steel decision, the possibility of vigorous antitrust enforcement was ". . . relegated to limbo (p. 65)." However, if the decade of the 1920's was noted for its laxness of antitrust enforcement, the economic crash of 1929 signaled a change of direction on the horizon.

#### New Deals, New Wars, and New Directions

"Some faiths fall upon ground which permits an immediate and rapid growth, but which subsequently fails to sustain such faiths in times of adversity. The Great Depression came in 1929 to test the judiciary's apparently deep and abiding faith in business. Investors lost their savings; employees lost their jobs; and businessmen lost their standing of being first in the hearts of their countrymen (Van Cise, 1976, p. 107)." Added to the strains of the depression, this period is also marked by the disruptions brought about by World War II. These contrasting strains on American society and the economy would elicit differing approaches to antitrust over the two decades.

The early 1930s seem to be a continuation of the 1920s in respect to antitrust enforcement. Roosevelt's early New Deal efforts, as embodied in the National Industrial Recovery Act (NIRA), according to

Mueller (1983) and Stocking and Watkins (1951), represented a repudiation of the antitrust laws:

Self-government in industry, by majority rule, was the gist of the NIRA. This prescription for industrial recovery represented manifestly, a reaffirmation of the thesis on which big business had been built up--that competition is bad for business. In fact, Congress suspended the antitrust laws in authorizing the formation of industry-wide syndicates under so-called 'codes of fair competition' (p. 44).

However, in a 1935 court test of the NIRA, *Schechter Poultry Corp. v. U.S.* (295 U.S. 495, p. 55, 1935), the Supreme Court dealt a death blow to President Roosevelt's recovery plans by declaring the NIRA unconstitutional. Antitrust would be a permanent feature of the business landscape, if the Court had anything to say about it, and it did.

Antitrust enforcement took a sharp turn in 1937 when Thurman Arnold was appointed to head the new Antitrust Division created in 1933 (Bickel, 1983). Under Arnold, the Antitrust Division was provided with resources to expand its staff to approximately 250 lawyers by the time World War II arrived (Bickel, 1983). This represented a major expansion of the government's activity in antitrust enforcement. Mueller (1983) describes the new enforcement environment in admiring terms:

During 1937-42, a period many recall as the golden age of antitrust, Thurmond Arnold pursued an aggressive policy. In a single year he filed more Sherman Act cases than had been brought during the first 20 years of the Act. Perhaps the main legacy of these years was the demonstration that antitrust still had a meaningful role a half century after the Sherman Act was enacted. Although Arnold's big cases generally were stalled during the war years, the antitrust agencies rebounded strongly at war's end, and the big cases went forward (p. 22).

Throughout this time the courts attempted to maintain the basic principles of competition, as was evident in the *Schechter* decision.

However, the forces of change were building and would soon cause a change in direction for the Court.

Although the merger area during the 30's and early 40's seemed to reflect the period of the 1920's, according to Van Cise (1976), other areas of the antitrust laws were changing. That is, the courts made attempts to restrict the "rule of reason" in its scope and application during this antitrust period. For example, industry-wide price fixing had been condemned earlier, but reasonable forms of limited price fixing had been permitted under the "rule of reason," as in the Chicago Board of Trade case (1918). Now, however, all attempts at price fixing were declared to be "per se" unlawful (e.g., United States v. Socony-Vacuum Oil Co., 1940). Other types of conduct also came under renewed scrutiny, such as certain forms of patent-tying and boycotts. These were also condemned as "per se" objectionable.

Toward the end of this time period, Einhorn and Smith (1968) recognize the Aluminum Company of America case (1945) as a real watershed in judicial interpretation of antitrust. This case they believed narrowed the gap between the judicial and economic views of antitrust. The case focused on issues of monopoly considered critical by economists--e.g., definitions of line of commerce and the market--as opposed to the presentation of evidence of behavior designed to exclude competitors.

However, others (e.g., Dewey, 1964) see the Aluminum Co. case as important because of the implications of Justice Hand's opinion in the case. Hand suggested that a section 2 violation by any firm that controlled more than some specified share of the market, irrespective

of the tactics used to acquire or defend this share, was guilty of an antitrust violation (Dewey, 1964). The implication of this statement, had it been implemented in future cases, was that firm size (as measured by market share) would constitute monopolization "per se." It seemed clear that new and dramatic changes in the court's approach to antitrust were looming.

#### Activist Court

By the late 1940s and early 1950s America had undergone a change in its attitude toward business and toward the role of government in the economic system. The country had moved from the era of unbounded faith in business in the late 1920's and early 1930's, to an attitude which Van Cise (1976) describes in the following terms:

A competing faith--faith in Government--then was born during the middle and late 1930's. And this new faith thereafter grew and prospered. The emergency of the depression was succeeded by the emergency of the war; these in turn were followed by the crises of the cold wars . . . and during this period continuous injections of Government controls into the blood streams of business became habit-forming. The abnormal became the normal order of the day. . . The new faith in Government, under these circumstances gradually won numerous judicial converts as well as many of the general public. The result, in part, was to correct any previous undue solicitude for business. In turn, however, increasing deference to the wishes of Government became apparent (pp. 107-108).

Thus, unlike the experience at the end of World War I, the ending of the Second World War did not witness a reduction in antitrust enforcement. Rather, there was a new environment of activism by the courts and by the enforcement agencies.

Handler (1973) characterizes this period from 1950-1973 as one in which the court reaffirmed, clarified, and strengthened the rules



inherited from its predecessors. Others, however, see this period as one which reflected an activist court that lacked consistency with previous decisions or with other contemporaneous court decisions and one which gave increasing deference to the government (see, for example, Van Cise 1969, Bork 1978, Posner 1976). One apparently frustrated Justice in dissent observed that: "The sole consistency that I can find [in merger cases] is that in litigation under Section 7, the government always wins (United States vs. Container Corp. of America, 393 U.S. 333, p. 89, 1969)." Another Justice took his colleagues to task in reference to a lower court decision in which all judges were in agreement but which was set aside by the Supreme Court:

All semblance of judicial procedure has been discarded in the head-strong effort to reach a result that four members of this Court believe desirable. In violation of the Court's rules, the majority asserts the power to dispose of this case according to its own notions, despite the fact that all parties participating in the lower court proceedings are satisfied that the District Court's decree is in the public interest (Utah Public Service Commission v. El Paso Natural Gas Co., 395 U.S. 464, p. 89, 1969, dissenting opinion).

One of the first impacts of the new judicial environment was, according to Van Cise (1978), in the area of "per se" and "rule of reason" judgments. Handler (1973) viewed this period as one in which the philosophy of "per se" illegality was in the ascendancy. He applauded this development in certain types of cases (e.g., tying cases) where a decision exemplifies the utility of a "per se" approach, ". . . providing a simple rule, easily enforced, where an involuntary arrangement impinges upon economic freedom and has no redeeming virtue (p. 97)." Van Cise (1978), on the other hand, saw the ascendancy of

the "per se" approach as a movement away from the "rule of reason" approach. He found this objectionable:

Indeed, a high water mark in thus curtailing the rule of reason was an opinion [Fortner Enterprises, Inc. v. U.S. Steel Corp, 1969, ed. note] to the effect that if a tying practice was found not to be per se unlawful this conduct might still be condemned under the heretofore less demanding general principles of the rule of reason. . . . Furthermore, this curtailed form of rule of reason came more and more to reflect the reasoning of the Government and its allied private treble damage plaintiffs. Any undue sympathy for the reasoning of business became a remote phenomenon of the past (p. 109).

This ascendancy further represented the new faith in government, according to Van Cise, and business' ". . . cardinal virtue of private initiative now was pronounced an unlawful method of excluding competitors, if exercised too successfully (p. 110)."

Helping to fuel the new activist direction of the Court was an important piece of antitrust legislation passed by the Congress in 1950, the Celler-Kefauver Act. The intent of the Act was to strengthen merger enforcement under the Clayton Act (Bickel, 1983). However, the law was written in such general terms that it fell upon the courts and the FTC to determine its scope. This has prompted a group of antitrust observers, Brunner, Krattenmaker, Skitol, and Webster (1985), to characterize Celler-Kefauver as ". . . a statute of enigmatic generality (p. 5)." Thus, the Court was forced into an even more active role in guiding the direction of the antitrust laws through its power of interpretation.

Through a number of decisions, e.g., *Brown Shoe Co. v. United States* (1962) and *United States v. Von Grocery Co.* (1966), the courts have interpreted Celler-Kefauver as an antimerger law designed to plug

the loopholes on asset acquisitions and horizontal mergers, as well as to block mergers when a trend toward concentration in an industry had just begun (Brunner, 1985). Others, for example Bock (1964), McGee (1971), Weston (1972), Demsetz (1973), Brozen (1974), McCracken (1973), Bork (1978), Posner (1972), and Liebler (1978), view this process of court interpretation in the 1950's and 1960's as the development of the "market concentration doctrine" with its attendant biases toward small businesses and against large firms (Briefs, 1980).

Van Cise (1978) also sees this as a period in antitrust enforcement when the Court was sympathetic to protecting the small merchant, ". . . even where his business is so minor that his destruction would make little difference to our economy (p. 147)." As evidence he cites the following passage from the 1966 Von's Grocery decision:

From this country's beginning there has been an abiding and widespread fear of the evils which flow from monopoly-- that is, the concentration of economic power in the hands of a few . . . Like the Sherman Act in 1890 and the Clayton Act in 1914, the basic purpose of the 1950 Celler-Kefauver Act was to prevent economic concentration in the American economy by keeping a large number of small competitors in business (384 U.S. 270, p. 86, 1966).

It was during the 1960's that the antimerger movement seemed to reach its zenith as the Supreme Court handed down several decisions finding conglomerate mergers illegal. Mueller (1979) reports that the antitrust agencies challenged nearly 30 percent (measured by assets) of all large mergers in manufacturing and mining in 1969-70.

The antimerger sentiment of the court seemed to have, as suggested above, a parallel counterpart within the enforcement agencies. Thus, for example, Mueller (1986) cites the following enforcement statistics:

During the 27 years following its enactment [Cellar-Kefauver Act of 1950], the Department of Justice and the Federal Trade Commission challenged 1,021 mergers and acquisitions in 289 complaints (Mueller 1979) and; in the 1950's, the agencies challenged virtually every sizable horizontal merger. In 1956, for example--the record year in opposing such mergers--the agencies challenged 48% (measured in assets) of all large (assets exceeding \$10 million) acquisitions of manufacturing and mining corporations, cases that culminated in lower-court and Supreme Court decisions establishing tough legal standards for horizontal mergers . . . (pp. 30-31).

Dewey (1964) also reports on the vigorous activity of the enforcement agencies for the thirteen years prior to May, 1963. He indicates that the antitrust agencies had begun 117 cases under the Celler Amendment, involving just over 600 acquisitions and representing approximately six percent of the acquisitions throughout the entire economy.

#### Counter Attack

Many antitrust theorists believe that the antitrust activism of the courts from the early 1950's through the early 1970's has been succeeded by a swing of the pendulum in the opposite direction. Mueller (1986), for example, sees the period beginning in 1981 as a concerted attack on the foundations of antitrust aimed at changing enforcement standards and court-made law. He sees this attack being led by the "doctrinaire disciples" of the Chicago School of Economics.

Flynn (1977) believes that the latest antitrust period may be a response to the "open-ended" and uncertain evolution of antitrust in the 1950-1970's era. He sees a new effort to bring greater certainty and predictability to antitrust analysis by the ". . . rigorous employment of the seemingly objective and value free tool of statistical analysis of quantifiable empirical evidence pursuant to models

designed to maximize 'economic efficiency' (p. 1184)." Because this latest period of antitrust evolution is still unfolding and its outcome is uncertain, a review of this period is premature.

Instead, attention is turned to a discussion of the debate concerning antitrust and reflected in Flynn's (1977) following statement of the issues:

The quest for certainty has not been limited to courts staffed by judges more sympathetic to the need for predictability, narrower in their view of the function of courts, and trusting in the ability of verbal rules to dictate outcome. Indeed, the ideological shifts in the courts have followed the escalation of debate and dissension among the scholars of antitrust. In recent years the intensity of the scholarly debate has dramatically increased as proponents of 'economic analysis' of legal issues have brought to bear the potentially powerful insights of their methodology to 'issues antitrust' (p. 1184).

It is these scholarly debates that are the subject of the subsequent sections of this chapter. More specifically, there are two topical areas within the antitrust literature that are of critical importance for this study.

One of these areas relates to the debate regarding the underlying purpose of the body of antitrust law. A second focus explores alternative approaches for analyzing and judging antitrust behavior that have been suggested in the literature and the associated implications of the selection of one method over another.

#### Purpose Of Antitrust Law

There is general agreement, see for example Bork (1978) and Burns (1969), that the clear identification of the intent and/or purpose of a law or a body of laws is highly desirable because it serves as the philosophical foundation for policy. The policy emanating from law

serves to define the boundaries of permissible behavior and practices of citizens, organizations, units of government and any others who may fall under the purview of a particular law. Further, the purpose and/or intent guides the manner in which a law is implemented and prosecuted, as well as the nature of the punishment meted out to those found guilty of breaking the law.

Although it would be of great benefit to identify the single most important purpose of the antitrust laws, unfortunately, such an identification is not currently possible and may never be possible. Disagreement concerning the intent of the lawmakers who drafted the initial antitrust law, the Sherman Act, has been robustly argued for over three-quarters of a century--see, for example, Bork (1966 and 1978), Bork and Bowman (1965), Posner (1976), Letwin (1965), Blake and Jones (1965), and Thorelli (1955)--without a clear consensus in sight.

The 1940 investigation by the Temporary National Economic Committee, aimed at uncovering the intent of the Sherman Act by reviewing its legislative history, suggests why the search is an elusive one:

In a search for intent the record has been thumbed through with meticulous care and to little purpose. The debate exhibits heat, passion, righteous indignation against the devil of monopoly. \* \* \* The great bother is that the bill which was passed was never really discussed. The House, in fact, never had a chance at the measure which provoked discussion (Burns, 1969, p. 18).

Therefore, because it was not fully discussed, the intent and purpose of the lawmakers who voted for its passage is not fully known resulting, in much heated debate.

### Confusion and Conflict

The result of the uncertainty regarding purpose, which has grown even more acute since 1940 with the passage of additional antitrust laws, agency rulings, and court decisions, is confusion and conflict regarding antitrust policy. Burns (1969) sums up this view in his assertion that ". . . there is no agreement among either the enforcement officials, the courts, lawyers or members of Congress as to what the antitrust policy is or has been. The story is one of conflict and confusion (p. 18)."

Bork (1978) echoes these sentiments: "Because antitrust's basic premises are mutually incompatible, and because some of them are incorrect, the law has been producing increasingly bizarre results. Certain of its doctrines preserve competition, while others suppress it, resulting in a policy at war with itself (p. 7)." Perhaps Chief Justice Warren's juxtaposition of contradictory sentences in the "Brown Shoe" decision is one of the best examples of the "bizarre" results Bork had in mind:

It is competition, not competitors, which the Act [ed. note: Sherman] protects. But we cannot fail to recognize Congress' desire to promote competition through the protection of viable, small, locally owned businesses. Congress appreciated that occasional higher costs and prices might result from the maintenance of fragmented industries and markets (Elzinga, 1977, p. 1203).

This ruling, first affirming, then denying, the central role of competition in judging antitrust has been widely quoted and frequently criticized by theorists from all spectrums of the antitrust debate as contributing to the confusion in antitrust--see Bork (1978) and Blake and Jones (1965).

However, whereas the above critics see confusion and conflict, others see flexibility. This attitude is reflected in the opinion of Chief Justice Charles Evans Hughes statement regarding the Sherman Act (Appalachian Coals, Inc. v. U.S., 1933) and describing it ". . . as a charter of freedom . . . [that] has a generality and adaptability comparable to that found to be desirable in constitutional provisions (p. 359)." Notwithstanding these protestations, there continues to be numerous calls for developing antitrust rulings and policies exhibiting a greater sense of certainty.

#### Problems With Uncertainty

The problems associated with antitrust's confusion and uncertainty were apparent as early as 1938 to Justice Robert H. Jackson, Assistant Attorney General in charge of the Antitrust Division:

In view of the extreme uncertainty which prevails as a result of these vague and conflicting adjudications, it is impossible for a lawyer to determine what business conduct will be pronounced lawful or unlawful by the Courts. This situation is embarrassing to businessmen wishing to obey the law and to government officials attempting to enforce it (Jackson and Dumbauld, 1938, p. 232).

Nor would it appear that these problems have been cleared up since 1938. John J. Flynn (1977) reflected the view of many in the legal profession as he commented on the antitrust decisions made by the Warren Court: "At its simplest level, legal realism suggested that one should be aware of the ideological complexion of decision makers [ed. note: i.e., justices] and perhaps try to discover from what 'side of the bed' they happened to arise on decision day."



Perhaps the comment, related by Bork (1978), of a prominent jurist reflects the frustration many people have with determining the proper approach to antitrust:

Several hundred lawyers at a meeting of the Antitrust Section of the American Bar Association listened to a nationally prominent attorney, who subsequently became an Associate Justice of the Supreme Court, contend that it was fruitless to worry about antitrust's intellectual problems. Antitrust, the attorney said is in the good old American tradition of the sheriff of a frontier town: he did not sift evidence, distinguish between suspects, and solve crimes, but merely walked the main street and every so often pistol-whipped a few people (p. 7).

Fortunately, most of those involved in the controversy surrounding the purpose and policy of antitrust in the United States are not likely to be satisfied with this approach. Rather, most antitrust theorists and those involved in the debate over antitrust goals will attempt to develop an antitrust policy which is grounded in sound theory, possesses internal consistency, a high degree of predictability, and an outcome favorably disposed toward their own ideological position. As the following sections will demonstrate, there seems to be no lack of these ideological positions regarding the goals of antitrust law.

#### Ideological Battleground

Antitrust law and policy development has become an ideological battleground upon which a protracted and, at times, bitterly intense conflict has been waged. Describing the nature of this conflict and of the positions of the various combatants is a complex and difficult task. This is true for a number of reasons. One reason is because of the numerous views on the subject of antitrust. The antitrust literature is well populated with the various philosophical arguments

and positions associated with a wide variety of individuals or groups of individuals--e.g., economic efficiency vs. equity (see Elingza, 1977); economic efficiency/consumer welfare vs. anticompetitive/protectionists (Bork, 1978); Chicago School vs. Harvard School of industrial organization (Sullivan, 1977); neoclassical vs. mainstream economists; legal vs. economic view of antitrust, and so on. There are even some (see Armentano, 1982, and Thurow, 1980) who believe that the United States government should do away with antitrust law enforcement altogether. Although it is true that these numerous voices add to the richness of the debate, they also add to the complexity of analysis.

An added difficulty in analyzing these philosophical perspectives is that each of the proponents describing his/her own position, vis a vis, those of others uses a unique way to define, characterize, or classify the collection of arguments. The search for common meaning and framework among the various discussants is frequently a frustrating process. Thus, the task of sorting the primary ideological positions becomes even more difficult because of this lack of a common taxonomy.

A second reason for the difficulty in describing the nature of the antitrust debate is that the position of the combatants often changes, supporting first one side and then another. For example, the work of Turner (1966) and Areeda (1974) was initially cited as supporting the arguments of the so-called "Harvard School" of industrial organization. However, their later work (Areeda, 1983 and Areeda and Turner, 1975) is often described by members of the Chicago School (see Posner, 1979, for example) as supportive of their theories or of at least of taking an "intermediate" position. Further, the proponents of differing

viewpoints often use the same philosophers to support their theory. As an example, both Bork (1979) and Santangelo (1983) contend that their opposing philosophies are a logical extension of Adam Smith's view of capitalism.

A third challenge associated with describing the nature of the antitrust conflict and debate is the seemingly indistinct time horizon. Disputants (see Bork, 1966, and Thorelli, 1955) go back to the previous century to develop confirmatory evidence for today's arguments. Issues attracting the greatest amount of current attention have their antecedents in debate of the 1940's and 1950's (see Director 1956). The nature of the argument changes with the addition of new tools of analysis leading to the need for thorough reanalysis of previous theories. During the relatively long time horizons (law and its interpretation can change dramatically in the short term) the influence of theories and schools of thought tend to wax and wane as each repositions itself vis a vis the other schools with the aid of new methods of analysis. An example of this phenomenon is illustrated with the claim of two of the antagonists (see Posner, 1979, and Bork, 1982) of victory for the "Chicago School" approach to antitrust analysis; however, others with a different approach have responded that the fight has just begun.

Consequently, because of the complications associated with the study of antitrust cited above, a simplifying classification scheme would facilitate this investigation of antitrust. A classification scheme for this purpose is discussed in the following section.

### Two Approaches To Antitrust Theory

Although it has been suggested by at least one source (Antitrust and Law Review, 1985, Vol. 4) that there are as many as five different "schools" of thought related to antitrust philosophy, this study will consider only two broader categories and will identify, when possible and pertinent, related subcategories. All of the variables of central concern can be captured within these two broader categories and can be efficiently and effectively analyzed to make further categorization unnecessary. Further, the use of two broad categories of ideologies avoids the excessive overlap often present when more than two categories are utilized.

The two categories that will be used to classify the antitrust theories of primary importance to this study will be titled: 1) The Economic Efficiency-Classical Approach (EECA), and 2) The Multiple Goal-Situational Approach (MGSA). These titles were selected in an attempt to reflect the core philosophies of diverse thinkers and proponents of two often conflicting antitrust belief systems. It should be noted that the two approaches described do not include all possible positions but, rather, incorporate the most dominant views expressed in the economic, antitrust, and industrial organization literature. Specifically excluded are the views of classical laissez faire adherents; American liberals who believe that American enterprises need to be large to compete internationally and would direct the economy through use of industrial policy; Marxists, who generally reject the possibility of effective regulation of monopoly; and other views of antitrust with less notoriety.

### Differentiating Elements

The Economic Efficiency-Classical Approach (EECA) and the Multiple Goal-Situational Approach (MGSA) differ in several respects. First, the former has a single focus in respect to interpreting antitrust laws, while the latter supports multiple approaches. That is, the EECA believes that economic efficiency is the sole *raison d'être* for antitrust laws. The Multiple Goal-Situational supporters counter that there are a variety of goals other than economic goals that are equally valid. Thus, antitrust law may concern not just economic outcomes but social and political outcomes as well.

A second difference relates to the assumptions that support each of the approaches. These assumptions address the basic nature of competitive behavior and methods that encourage or forestall its existence (e.g., the impact of vertical/horizontal mergers). Implicit in many of the assumptions are the values espoused by one approach or the other (e.g., concentrated industries have a malevolent vs. benevolent effect on the economy).

A third area of difference between the two schools pertains to the tools used to analyze antitrust issues. The Economic Efficiency school insists that the only rational approach to analysis lies in the application of the classical economic models of competition. Multiple Goal-Situational proponents argue that there are a variety of other approaches that might be used to analyze antitrust issues (e.g., economic indices, legal analysis, and social-political methods).

Finally, and because of the aforementioned areas of differences between these two approaches to antitrust, the policy prescriptions of

each school vary considerably. A more detailed analysis of each of the approaches to antitrust suggested above will be completed in the following sections.

#### The Economic Efficiency-Classical Approach

Although having its roots in the earliest discussions of antitrust laws, the Economic Efficiency-Classical Approach, has only recently had a significant impact on judicial thinking and decision making. Judge Robert Bork, as reported by Bickel (1983), has called this movement no less than ". . . an intellectual revolution in the understanding of antitrust laws [that] has been taking place during the last 20 years (p. 1086)."

The influence of this school of thought has been expanded and sustained by economists with national and international reputations. The New York Times (Oct. 21, 1982) reports that, of the 12 Americans who had won the Nobel Prize in economics up to 1982, eight had been associated with the University of Chicago. Bickel (1983) contends that the reason the "Chicago School" has gained such wide currency is their belief and ability to convince others that ". . . the science of economics has reached a point where behavior can be mathematically judged anticompetitive or not through economic models (p. 1088)." Santangelo (1983) echoes these sentiments, indicating that the ". . . apparent appeal of this [Chicago] approach stems from the perceived ability of microeconomics to provide an objectively quantifiable and value-neutral benchmark for the law (p. 843)."

The goals, assumptions, tools of analysis, and policy prescriptions of the Economic Efficiency-Classical Approach, will be examined in this

SPONSORING THEORIST	PROPOSITIONS/ ASSUMPTIONS	METHODS OF ANALYSIS	IMPLICATIONS/POLICY DESCRIPTIONS
Director (1956)	Firms cannot in general obtain or enhance monopoly power by unilateral action.	Price theory analysis.	Focus of antitrust laws should not be on unilateral action (i.e., vertical restraints) instead focus should be on cartels and horizontal mergers.
Bowman (1965, 1973)	Fewer competitors does not necessarily mean less competition; efficiency is possible at all levels of market concentration.	Prediction of whether efficiency effects outweigh trade restraining effects.	Vertical foreclosure by contract and vertical mergers should not be illegal per se but rather practices should be evaluated on their efficiency-trade restraint properties.
Bork (1965, 1969, 1978)	Vertical and conglomerate mergers are capable of creating efficiencies and incapable of impairing competition.	Economic theory	The law should consider abandonment or modification of the theory of exclusionary practices. Economic efficiency should be the only objective of antitrust law.
Stigler (1968)	Tacit collusion is a problem only at very high levels of concentration.	Collusion and oligopoly behavior are analyzed using tools of price theory	Arresting or destroying concentration levels in industries is unnecessary.
Deesetz (1974)	Competitive superiority rather than collusion may explain the correlation between high and stable concentration and persistently high profit rates.	Economic theory and empirical observation.	A policy of decentralization could impose substantial efficiency costs.
Posner (1974, 1976, 1979, 1981)	Vertical arrangements and policies are unlikely to extend monopoly power to the initiating firm.	The proper lens for viewing antitrust problems is price theory.	Legislative enactments, public policy, and judicial findings ought to be based on economic analysis of the consequences of firms' behaviors.
McBee (1971)	Industrial concentration confers no per se market advantages	Economic analysis based on classical economic theory.	Minimum government interference in markets, and: 1) presumption of lawfulness of monopoly growth; 2) analyze each merger as to efficiency effect; 3) remove legal barriers to entry of regulated industries; 4) reject notion of relationship between competition and concentration.

section. An introductory summary of the positions and arguments of several of the principle proponents of this philosophy of antitrust is shown in Table 2-2.

#### Antitrust Goals

The primary concerns of antitrust legislation and enforcement should be economic in nature and directed toward the attainment of economic efficiencies, lower prices, expanded output, and greater consumer welfare, according to EECA partisans. Two of the leading intellectual supporters of this approach argue that the only way to rid the law of its historically confusing and contradictory results is to focus solely on the economic goals of the law. Thus Posner (1976) advises that: "The reach of antitrust policy has broadened and its thrust deepened, and in the process confusion about both its aims and methods has grown . . . (p. vii)" and, therefore, ". . . the proper purpose of the antitrust laws is to promote competition, as that term is understood in economics [p. ix]." His view is strongly supported by Bork (1978) who believes that:

A multiplicity of policy goals in the law seems desirable to some commentators, though they do not address the question of whether the goals contradict one another and how such contradictions are to be resolved in deciding specific cases. Other commentators appear to think the question of goals essentially unsolvable, one of those ultimate value choices about which men can never be expected to agree. . . . These are positions I wish to dispute. The antitrust laws, as they now stand, have only one legitimate goal, . . . The responsibility of the federal courts for the integrity and virtue of law requires that they take consumer welfare as the sole value that guides antitrust decisions (pp. 50-51).

Bork further explains that consumer welfare can only be maximized through competition and that, "Competition, for purposes of antitrust



analysis, must be understood as a term of art signifying any state of affairs in which consumer welfare cannot be increased by judicial decree (p. 51)."

In conjunction with the superiority of consumer welfare as the focus of antitrust law, Bork (1978) warns of the problems that are likely to be encountered if consumer welfare is forsaken for other goals. He further explains the advantages that accrue when it is retained as the exclusive goal:

. . . a multiple-goal antitrust law appears so attractive to many people that it may be worthwhile to suggest some of the ways in which the single goal of consumer welfare is superior. Exclusive adherence to a consumer welfare goal is superior in that it 1) gives fair warning, 2) places intensely political and legislative decisions in Congress instead of the courts, 3) maintains the integrity of the legislative process, 4) requires real rather than unreal economic distinctions, and 5) avoids arbitrary or anticonsumer rules. A multiple-goal approach can achieve none of these things (p. 81).

The Posner-Bork positions on antitrust law, briefly reviewed above, have become the leading arguments for the Economic Efficiency-Classical Approach.

Some proponents (see Areeda, 1983, for example) of the EEC Approach do not disagree with their philosophical rivals in the Multiple Goal-Situational Approach school in their contention that other outcomes may be important. However, they believe that these outcomes (e.g., political and social goals) will either flow naturally and automatically from attainment of economic efficiency (Bork and Bowman, 1965) goals or they can be attained via other means without muddling the body of antitrust law. Bork (1978) addresses the latter point contending that ". . . Congress has available and has used such legislation as tax benefits, subsidies, tariffs, and . . . the antitrust laws are only a

haphazard and inefficient means of promoting such values . . . (p.70)."  
Consequently, his preference would seem to be reflected in Santangelo's  
paraphrase of the EEC Approach (1983), ". . . the overriding premise of  
the Chicago school approach is that to the extent other values are  
involved in antitrust, they are to be disregarded if these non-economic  
values conflict with efficiency, for it is efficiency that is in the  
consumer's and hence society's best interest (p. 883)."

#### Propositions and Assumptions

Whereas the previous section discussed the macro premises of  
EECA's view of antitrust law, this section addresses the micro premises.  
That is, the economic approach is based upon a large number of proposi-  
tions and assumptions that deal with specific types of competitive  
behavior and that, when taken together, lead to the conclusions  
suggested in the previous section. For example, several of these micro  
propositions and assumptions are depicted in the second column of Table  
2-2 on page 75.

The specification of every proposition and/or assumption suggested  
by proponents of the EEC Approach to antitrust law is beyond the scope  
of this study and unnecessary for the purpose of conveying the general  
thrust of the approach. A complete listing would require a lengthy  
review of the basic assumptions underlying classical economic theory  
(interested readers are referred to widely available, basic macro/micro  
economic texts). Rather, the purpose of this section is to identify the  
primary propositions and assumptions which distinguish the EEC Approach  
from the multiple goal approach.

Enumerated below are the assumptions that distinguish the "economic efficiency" thinking from the "multiple goal" approach. The assumptions of the latter are examined in subsequent sections.

1. The artificial protection of competitors is inconsistent with the objective of promoting competition. This is the case, according to Blakeney (1981), and reported by Bickel (1983), since elimination of a weak competitor may be an incident of healthy competition. That is, it is competition, not competitors, that antitrust must protect, if it is to the goal of maximizing consumer welfare. Bickel (1983) contends that the underlying validity of the "Chicago" theory hinges on one's view of the intent of the Sherman Act in respect to the protection of competitors vs. competition.
2. Firms are rational profit maximizers. If they fail to maximize their profits, market forces will mete out sufficient punishment to deter the conduct without requiring imposition of the penalties of the antitrust laws, according to Bork (1978) and Posner (1979). In other words, the market will self-correct by rewarding new competitors who will maximize at the expense of non-maximizers.
3. There are no true barriers to market entry (Posner, 1976). All existing firms represent potential entrants into another's market. The only real barriers to entry are efficiencies to scale and government action. To wit, all markets are either competitive or tending toward that state and consequently, ". . . if monopoly power is observed to exist, it must be either

because a firm is more efficient than its rivals or that the industry is being 'protected' by certain government policies (Antitrust Law and Economics Review, 1985, p. 8."

The general assumptions/propositions above can be extended to include a subcategory of propositions. For example, the three propositions below and several in Table 2-2 logically flow from the acceptance of #1 - #3 above.

4. Vertical and conglomerate mergers are capable of creating efficiencies and incapable of impairing competition (Bork 1965). This flows from assumptions/propositions #1 and #3.
5. Interindustry mergers (conglomerates) are not likely to have anticompetitive effects (Areeda and Turner, 1975). This is likely to be the conclusion, if one accepts the view that there are no barriers to entry and every firm is a potential competitor (#3).
6. Firms cannot in general obtain or enhance monopoly power by unilateral action (Posner, 1979). For example, selling below costs is unprofitable, even in the long run, because barriers to entry will not keep out competition (proposition/assumption #3). Further, it would be irrational to trade profits for market position and firms would not behave irrationally (proposition/assumption #2).

Additional propositions might be identified. However, the above examples, in addition to those in Table 2-2, serve to illustrate the nature of the Economic Efficiency-Classical Approach and will suffice for purposes of comparison with the Multiple Goal-Situational Approach.

### Methods of Analysis

Another area of contention between the Economic Efficiency and the Multiple Goal Approaches involves the prescribed methods and tools that should be used to analyze firm and industry behavior in antitrust cases. Adherents to the former approach believe that the methods of classical economists and their price theory tools have advanced to a point that permits their use as definitive evidence. Bork (1965) contends that there ". . . is no body of knowledge other than conventional price theory that can serve as a guide to the effects of business behavior upon consumer welfare. To abandon economic theory is to abandon the possibility of a rational antitrust law (p. 117)." Posner (1979), in comparing the current state of the art of economic analysis with previous periods, contends that ". . . whereas much antitrust argument was uninformed by rudimentary price theory in the 1960's, the role of microeconomics in antitrust is now securely established (p. 926)."

### Use of Classical Economics

The specific models to be used for an economic efficiency approach to analysis are those shown in Exhibit 2-1 on p. 20. Sullivan (1975) partially differentiates the Chicago (EECA) and Harvard (MGSA) schools of antitrust on the basis of the models each uses. In regards to the Chicago school, Sullivan citing, Stigler (1964) and Posner (1969), specifies the central role of the two structural models--the competitive and the monopolistic--of microeconomic theory and explains the treatment of cases that fall outside of the explanatory power of these models:

It treats oligopolistic markets as presenting merely conduct problems which can be approached through cartel theory. Chicago analysts also deal with resale price restrictions solely through cartel theory; they assume that unless these restrictions are in fact imposed in response to pressure from buyers, they can be taken to be efficiency-producing and competitively harmless (p. 1217).

Critics, e.g., Sullivan (1975), Areeda (1981), Blake, Pitofsky, and Goldschmid (1981), attack the Economic Efficiency Approach, in part, because of its reliance upon static models. Further, the critics contend that the models are based upon questionable assumptions and that they are wholly inadequate for describing the complex reality of today's business environment. Bork (1978) uses an "it's not perfect, but it's better than anything else we have" argument to support the use of price theory as deductive proof of the antitrust effect of behavior:

The best-developed branch of price theory is the theory of the ways in which firms may profit by interfering with allocative efficiency. Though we know something of the subject, there is no comparably clear, reliable, and general theory of the ways in which they may create productive efficiency. It follows, therefore, that antitrust analysis, if it is to be successful, must proceed primarily by elimination. . . . The question is whether a method of applying the law can give an acceptable degree of accuracy and whether this method is better than any alternative method. The method of reasoning by elimination in antitrust cases passes both these tests. Indeed no other method of antitrust analysis is even possible, since the only alternative, that of quantifying both efficiency and restriction of output, is well beyond the present powers of economic analysis and is likely forever to remain so (p. 123).

Bork (1978) further contends that unless the law utilizes economic tools to evaluate allocative efficiency and consumer welfare, then the law ". . . acts blindly upon forces it does not understand and produces results it does not intend (p 92)."

### Reaction Against Other Models

As further support for the use of classical economic models in antitrust analysis, the economic efficiency proponents specify some of the weaknesses of the other approaches and the havoc the non-efficiency approaches have rendered on the antitrust environment. The attacks of the "Chicago" school against these other approaches have, at times, been virulent (as have been the attacks against the Chicago approach from the other side). An illustration of this type of argument is Posner's (1979):

The 'kinked demand curve,' 'workable competition,' 'cut throat competition,' 'leverage,' 'administered prices,' and other characteristic concepts of the industrial organization of this period (50's and 60's) had this in common: they were not derived from and were often inconsistent with economic theory, and in particular with the premises of rational profit maximization. They were derived from observation, unsystematic and often superficial, of business behavior (p. 931).

Bork (1965), as might be anticipated, is in full agreement with Posner's appraisal:

Social sciences other than economics have not progressed to a stage where they can be of use in decision making under the present antitrust laws. Probably that is why the political and social values mentioned in connection with antitrust usually turn out to be either mere rhetorical reinforcement of results arrived at on grounds of economic analysis or else unstructured mush (p. 415).

He argues further that the use of "correct" economic analysis in evaluating behavior is crucial, ". . . for it is just as important to consumers that the law not destroy efficiencies as it is that businessmen not suppress competition (p. 410)." Correct economic analysis in this context is related to the idea that some theorists have suggested (e.g., Handler and Robinson, 1965) that economic efficiencies should be

measured directly via studies of industry performance, an approach Bork believes is incorrect.

Instead of direct measurement, Bork (1965) counters that economic efficiencies, because they depend on a wide variety of factors (i.e., technical, managerial, financial, and organizational), many of which can not be directly studied or measured, must be evaluated and the decision of most cases must be accomplished by the use of the presumptions created with the guidance of economic analysis. In fact, he suggests that economic analysis does away with the need to measure efficiencies directly. Rather, Bork believes that it is ". . . enough to know in what sorts of transactions efficiencies are likely to be present and in what sorts anticompetitive effects are likely to be present. . . (p. 411)." It would then be up to the law to devise a set of objective criteria that would evaluate transactions into each category and to deal with them accordingly.

Posner (1979) has suggested that the issue concerning method of analysis has largely been determined in favor of the "Chicago School" approach to economic efficiency. He contends that the ". . . distinctions between these schools have greatly diminished. This has occurred largely as a result of the maturing of economics as a social science, and, as a corollary thereto, the waning of the sort of industrial organization that provided the intellectual foundations of the Harvard school (p. 925)." The depth of the emotion of the theorists opposed to a pure economic efficiency approach (e.g., Sullivan, 1977; Blake and Jones, 1965; and others) leads one to believe that the argument has not yet been finally decided, contrary to Posner's belief.



### Policy Implications and Prescriptions

As a result of the assumptions and the suggested methods of analysis described above, a series of prescribed policies emerges from the Economic Efficiency-Classical Approach. An exhaustive listing and explanation of the policies supported by adherents of the EECA is unwarranted for the purposes of this study. Rather, a selection of policies will be reviewed to help develop an understanding of the basic differences between the Economic Efficiency and Multiple Goal Approaches.

Table 2-2 on page 75 reviews a few of the policies prescriptions of the leading theorists of the Economic Efficiency-Classical Approach. The general view of the proponents of this school seems to be that: 1) the antitrust laws are in need of reform so that they more closely correspond with the conclusions that derive from classical economic analysis, and/or 2) the manner in which the laws are implemented and enforced needs to be reevaluated. Below are several of the primary policy prescriptions, and attendant implications, suggested by various theorists from the Economic Efficiency-Classical Approach.

#### A Consumer Welfare Standard

The test of whether antitrust action is justified ought to be the impact such action is likely to have on consumer welfare. Bork (1978) contends that departures from the consumer welfare standard ". . . damage the integrity of the judicial process by involving the courts in grossly political choices for which neither the statutes nor any other acceptable source provide any guidance (p. 405)."

The implication of using a consumer welfare standard, according to Bork (1978) and Bork and Bowman (1965), is that productive efficiency will become the yardstick for evaluating antitrust matters. This is true because productive efficiency represents the single most important factor contributing to that welfare and, therefore, must be given due weight along with allocative efficiency, according to Bork (1978). Failure to consider productive efficiency--or, worse, the tendency to view it as pernicious by calling it a "barrier to entry" or a "competitive advantage"--is tantamount to taxing efficient producers and consumers ". . . for the purpose of subsidizing the inept (Bork and Bowman, 1965, p. 375)."

#### A Limited Horizontal Focus

Proponents of EECA contend that the antitrust laws and their enforcement should be reformed so that the major impact will be on a limited class of horizontal behaviors. Bork (1978) lists three such classes of such behavior that might be regulated:

- a. The suppression of competition by horizontal agreement, such as the nonancillary agreements of rivals or potential rivals to fix prices or divide markets.
- b. Horizontal mergers creating very large market shares (those that leave fewer than three significant rivals in any market).
- c. Deliberate predation engaged in to drive rivals from a market, prevent or delay the entry of rivals, or discipline existing rivals.

Therefore, the antitrust laws should abandon their concern with ". . . such beneficial practices as small horizontal mergers . . . and

conglomerate mergers . . ." and with ". . . any firm size or industry structure created by internal growth or by a merger more than ten years old (Bork, 1978, p. 406)." Posner (1979), in agreement, proposes that antitrust laws focus on 1) cartels, and 2) horizontal mergers which are either large enough to create a monopoly directly, or that facilitate cartelization by dramatically reducing the number of significant sellers in the market.

Bork is further supported in his belief that destroying concentration levels in most industries is unnecessary and counter-productive. For example, Stigler (1974), Demsetz (1974), McCracken, and Moore (1974) and even non-Chicagoans Areeda and Turner (1979) are in essential agreement that a policy of deconcentration might have a deleterious effect on our economy by imposing substantial efficiency costs.

There are two primary implications associated with this prescription of a limited horizontal focus. The first implication, discussed in the following section, is that most efforts to influence vertical competitive behavior would fall outside the jurisdiction of antitrust law. The second implication is that many of the proposals to regulate horizontal competition and/or competitors (e.g., a deconcentration policy) would have to be abandoned.

#### A Green Light On Vertical Activities

Economic Efficiency theorists, including Bork (1978), Posner (1979), Director (1956), and Bowman (1965), argue that restrictions on vertical activities, including exclusionary practices, are fallacious. Director (1956) contends that these so-called "exclusionary" practices, such as price discrimination, vertical mergers, and exclusive dealing

contracts, are either competitive practices equally available to all firms or they are a means of maximizing the returns for a market position already held. Bork (1965) supports this position, suggesting that economic theory does not support prohibitions against vertical exclusions and integration. In fact, he believes that all successful methods of conducting business have the effect of foreclosing competitors from some customers--it is the basis of our economic system.

Posner (1979), addressing a key point from the contending point of view, asserts that there are no barriers to entry:

Persistent concentration implies either that the market in question simply does not have room for many firms (economies of scale) or that some firms are able to persistently obtain abnormal profits by cost reductions or product improvements that competitors and new entrants are unable to duplicate (p. 945).

Therefore, he argues, vertical restraints will not have the effect of impairing competition in the market.

The position taken by the Economic Efficiency theorists, regarding the impact of vertical competitive activities, has clear implications. Specifically, the law should permit agreements on prices, territories, refusals to deal, and other suppressions of rivalry that are ancillary to an integration of productive economic activity (Bork, 1965). Further, it [the law] should reconsider and vacate its concern with such potentially beneficent practices as vertical mergers, vertical price maintenance and market division, tying arrangements, exclusive dealing and requirements contracts, "predatory" price cutting, and price "discrimination." In Posner's (1979) words, ". . . vertical restraints ought to be allowed (p. 936)."

The impact of implementing the antitrust "reforms" suggested by the Economic Efficiency proponents would create great damage to the United States' economic, political, and/or social systems according to opponents. Their contrary views are examined in the following sections.

#### The Multiple Goal-Situational Approach

Allied against the "Chicago School" is a collection of individuals and groups with the common purpose of fending off the recent rise of the Economic Efficiency-Classical Approach. These people believe that the "Chicago School" threatens to undermine the body of antitrust law and theory that has developed since the early days of the Sherman Act and it is their purpose to respond to this threat.

The most distinguishable characteristics of this approach vis a vis the Economic Efficiency-Classical Approach are the assertions that: 1) while economic efficiency may be a central goal of antitrust, it is not necessarily the only goal that ought to guide policy; and 2) "good" economic outcomes may be defined, measured, and analyzed in a variety of ways, some of which are not consistent with classical economic theory. The former point suggests issues related to which goal or set of goals should take precedence in judging antitrust matters and the latter point raises issues related to process. These issues, as well as others concerned with assumptions and prescribed policies, are discussed in more detail in this section.

#### Antitrust Goals

Proponents of the Multiple Goal-Situational Approach (MGSA) have a variety of academic backgrounds and philosophical viewpoints, however,

they are united in their assertion of the validity of non-economic goals in antitrust law and policy. Blake and Jones (1965) reflect this argument: "We have no quarrel with the view that effectively competitive markets promote economic well being. . . . But we doubt that antitrust, as an integral part of the economic constitution of the United States can be defended solely on this ground (p. 381)."

Thus, instead of relying solely on the "Chicago School" criterion of economic efficiency as a test of antitrust behavior, the leading theorists and proponents from the Multiple Goal-Situational Approach, (Blake and Jones, 1965; Turner and Areeda, 1978; Bain, 1959; Brozen, 1974, and Tesler, 1964) contend that criteria for judging antitrust might also, and in some situations must, represent a variety of political and social goals as well. Areeda (1983) summarizes this viewpoint:

Let me begin by stating summarily the other possible goals of antitrust beyond maximizing consumer welfare. They include the political and social values of dispersed control over economic resources, multiple choices for producers and consumers free of the arbitrary dictates of monopolies or cartels, equal opportunity, equitable income distribution and "fairness" in economic dealings. As a general proposition, such goals are attractive to many citizens and perhaps most of them (p. 535).

Although there is general agreement among the MGSA theorists concerning the desirability of multiple antitrust goals, there are also a number of differences that are worth noting.

#### Goal Divergence

Despite their common goal of confronting and turning back the recent advances of the Chicago School, there are differences in the outlook of proponents of the MGS Approach to antitrust. For purposes

of this study, two separate subcategories of proponents of the Multiple Goal-Situational Approach are identified with respect to the divergence of their positions from the Economic Efficiency-Classical Approach.

A two category subclassification system tends to capture the essential differences among the various positions held by members of the anti-Chicago group. Members classified into each of these subcategories of the Multiple Goal-Situational Approach have in common a general belief, as discussed in the previous section of this paper, that there are goals other than economic efficiency that are important. Further, they do not agree with the "Chicago School" that major reforms in antitrust law and policy that would have the effect of over-turning previous court decisions and understandings are needed. However, members of each subcategory differ in respect to their views on several other important antitrust issues. Their positions on these other issues are distinct and important enough to warrant and compel a separate classification for each.

One group, the traditional industrial organization economists, focuses its disagreement with the Chicago School primarily on the tools and processes which they believe should be used to analyze antitrust matters. Individuals supporting this position will be called the Industrial Organization (IO) Process Group. The second subcategory of the Multiple Goal-Situational Approach is given the title of Social-Political (SP) Values Group. The focus of the disagreement between this second group and the "Chicago School" involves the philosophy and values that are to be used to guide antitrust law and policy. The

approaches recommended by each of these groups have important implications concerning the identification and treatment of antitrust matters.

#### The Industrial Organization Process Group

A brief review of the theories of some of the leading spokespersons from the Industrial Organization Process Group, also frequently referred to as the "Harvard School," is shown in Table 2-3. Despite disagreement with "Chicago School" theorists regarding the issue of multiple goals vs. a single goal of economic efficiency, most members of the IO Process Group support the idea that antitrust law is primarily economic in nature. Sullivan (1975), addresses this similarity between the two schools contending that although the Industrial Organization theorists identify other important goals of antitrust beyond efficient resource allocation, when their literature passes from the level of generalization to the level of analysis ". . . it contrives to keep goals other than resource allocation quite subsidiary. . . (p. 1216)." He further contends that: "Alternative goals may on occasion be used as tie-breakers where considerations of efficiency alone do not discriminate between one result and another (p. 1216)." Thus, the primary area of disagreement between the "Chicago" and "Harvard" schools seems to relate more to the recommended processes of antitrust analysis than it does to differences concerning the intent of the law. More is said about this in subsequent sections.

#### Propositions and Assumptions

Enumerated below are a number of basic assumptions and propositions associated with the IO Process Group's approach to antitrust. Weiss



TABLE 2-3: MULTIPLE GOAL-SITUATIONAL APPROACH/INDUSTRIAL ORGANIZATION

PRINCIPAL SPOKESPERSON/THEORIST	PROPOSITIONS/ASSUMPTIONS	METHODS OF ANALYSIS	IMPLICATIONS/ POLICY DESCRIPTIONS
Scherer (1976)	<ol style="list-style-type: none"> <li>1. concentration facilitates collusion (Oligopoly Theory)</li> <li>2. as barriers to entry rise, so do price-cost margins (Dominant Firm Theory)</li> </ol>	Structure-Conduct-Performance Empirical Analysis Methods	Examine firms conduct and performance for long run impacts on the economy.
Weiss (1979)	Antitrust ought to be judged on the basis of concentration and profitability	Structure-Conduct-Performance Empirical Analysis Methods	Dissolution proceedings in concentrated markets where persistent market dominance exists.
Williamson (1979)	New modes of vertical organization are designed to economize on transaction costs. Some vertical market restrictions may be warranted.	Analyze transaction costs rather than the firm or industry to evaluate vertical restrictions	Antitrust enforcement ought to discriminate and restrict its attention to cases in which strategic (i.e., anticompetitive) efforts arguable appear.
Bain (1956, 1968)	Multiple barriers to entry stifle competition and lead to concentrated industries and elevated price levels.	Cross-sectional (across industries) investigations	Use antitrust policies as a check against concentration.
Mueller (1986)	Market power and concentration leads to higher prices.	Price studies; use of empirical evidence	Use antitrust policy as a check against concentration.
Kayser and Turner (1959)	Barriers to entry are numerous and pervasive.	Market indices of concentration	Deconcentrate concentrated industries.
Freeda and Turner (1976)	Persistently high levels of concentration are harmful to efficient operation of markets.	Empirical evidence	Remedial action (under existing or new laws) where there is proof of non-competitive performance.

(1979) attaches the phrase "Structure, Conduct, Performance Paradigm" to the types of predictions associated with these assumptions. As might be expected, several of these assumptions and propositions contradict those of the Chicago School that were enumerated on pp. 78-80.

1. Economic models are too simplistic to reflect what happens in the real world (Scherer, 1980; Flynn, 1981; Dewey, 1969; Williamson, 1964; Areeda and Turner 1976). Santangelo (1983) reports that "Harvard" (IO) theorists reject the "Chicago School" theorists' rigid reliance on static economic models. Rather, he believes that "Harvard" theorists ". . . recognize that economic theory will be relevant to antitrust policy only if more realistic economic models, those that recognize the changes that occur within an industry over time, are employed (p. 985)." Schmalensee (1979), adding to this line of criticism, charges that Chicagoan economists pick and choose facts to fit into familiar models and ignore facts that do not fit into the model or cannot be measured. Therefore, he contends, the theory does not reflect economic realism. Further, several preeminent economists (as reported by Schmalensee), such as Leff (1947), Baumol (1967), Hirsch (1976), and Mishan (1977) have challenged the validity of the behavioral postulates of microeconomic theory and have criticized these as being overly simplistic
2. There are more than two models of competition. Bain (1968) and Scherer (1980), for example, argue that there are three general models, the two suggested by "Chicagoans," and the

oligopoly model. To the Industrial Organization theorists, perfect competition and pure monopoly are only hypothetical extremities which are inappropriate tools for evaluating the dynamics of economic competition, according to Santangelo (1983). Schmalensee (1979) takes the argument even further. He believes that the classical models of competition and monopoly are only two of a large number of more or less respectable economic models that provide potential sources of information for antitrust policy-makers and that ". . . several of the models may have predictions consistent with the evidence available (p. 995)."

3. Multiple barriers to entry exist and have the potential to stifle competition leading to concentrated industries (see, for example, Bain, 1968; Weiss, 1979; Williamson, 1979). Unlike the Chicago position that contends that meaningful entry barriers do not exist, IO economists recognize a variety of barriers (e.g., growth of demand, high capital requirements, advertising intensity, product differentiation, differing attitudes toward risk, and access to scarce resources). In addition, IO economists disagree with the Chicagoans' contentions that if an oligopoly arises and if it becomes inefficient and monopolistic, new competitors will enter the market to challenge the oligopolist's position by producing a better quality product and/or selling it at a lower price. Instead, artificial barriers may prevent entry by new competitors and

insulate an inefficient, oligopolistic firm from new sources of competition (see Blake and Jones, 1965).

4. Concentrated industries will facilitate collusion, whether tacit or explicit, and successful collusion will lead to persistently higher price and profit levels (Bain, 1968; and Scherer 1980). Weiss (1979) reviews forty-six studies examining the relationships between concentration and profits or price-cost margins in the United States, Britain, Canada, and Japan from 1936 and 1970 and concluded that most of these studies yielded significant positive relationships between concentration and profits. However, Liebeler, 1978, contends that a number of studies ". . . challenge the widely accepted proposition that high industry concentration and market power are necessarily associated (p. 1233)."

The propositions and assumptions above, as well as those listed in Table 2-3 on page 92, although not exhaustive, give a good indication, when compared with the Economic Efficiency-Classical Approach, of some of the primary areas of disagreement between the two approaches.

#### Characteristics of Industrial Organization Process Approach

Additional points might be made that will add greater insight into the nature of the Industrial Organization Process Group. One point relates to the first and second assumptions/propositions above and goes to the heart of the most critical difference between the IO approach and the pure Economic Efficiency-Classical Approach espoused by the "Chicagoans." Specifically, the IO view of the antitrust world and the role it assigns to pure economic analysis represents a major departure

from the Chicago view. Sullivan (1975) captures this phenomena in his comparison of the two approaches:

. . . the Harvard approach differs from that of the Chicago school in other ways that do have important significance for the development of policy. One of its defining characteristics is its stress on process. It sees a need to mediate in deliberate and rational ways between the ideal, as suggested by a theoretical analysis, and the attainable, which requires attention both to empirical issues and to the limits of judicial and administrative process. It seeks to fashion rules which can be applied to the kinds of facts which can be ascertained judicially or administratively (p. 1216).

The "realist" approach to markets, as described by Sullivan above, is an attempt to recognize the complexity of the world that escapes classical economic analysis. This leads the IO theorists to the concepts of "workable competition" and the "Theory of Second Best," which will be discussed at some length, after additional key differences between the "Harvard" and "Chicago" schools are noted.

Sullivan (1975) contends that the "Harvard" school is committed to a "structural" analysis of oligopolistic markets, whereas, the "Chicago" school (see Posner, 1969) treats oligopolistic markets as posing merely conduct problems that can be addressed using cartel theory. Sullivan (1977) also reports that "Chicagoans" see resale restrictions solely through cartel theory; they view resale restraints ". . . as harmful only if imposed at the instance of dealers utilizing the manufacturer to implement their own cartel (p. 1215)." The "Harvard" approach does not adopt the "Chicagoans'" assumption that these restraints are always efficiency-producing when they are not cartels. Instead, IO analysts would apply oligopoly theory to this situation. It seems evident from the above that, in respect to the economic process and methods that are

prescribed for use in antitrust, the Economic Efficiency ("Chicago") proponents and the IO Process ("Harvard") proponents are far apart.

"Harvard" theorists, according to Santangelo (1983), recognize that economic theory will be relevant to antitrust policy only if more realistic economic models are employed. What is needed, IO theorists believe, is analysis that recognizes the changes that occur within an industry or market over time, and classical models cannot do this. Santangelo goes on to suggest alternative models that have been introduced for the purpose of explaining " . . . the existence of barriers to entry other than economies of scale (see Brophy, 1977), uncertainty by business planners and investors (Raiffa, 1970), product differentiation (Schmalensee, 1972), and market power (Chamberlin, 1956) (pp. 884-85)." These efforts, along with many others, are aimed at displacing or supplementing the "static" Chicago models with alternative economic models which I-O theorists contend are more dynamic. For example, two prominent alternative theories of competition are described in the following sections.

#### Workable Competition

According to Scherer (1980), the idea of "workable competition" was first developed by J. M. Clark in 1940. This is a concept based on the premise that perfect competition does not, and cannot, exist and, therefore, the "competitive model" of theory affords no reliable standard for judging real world conditions. However, reasons Clark, some departures from the purely and perfectly competitive norm in a long-run context could leave the basic theory unharmed, while adding a healthy dose of realism. Consequently, he suggests that policy makers and courts use a

model of "workable competition" in lieu of the model of pure competition.

Warren (1975) describes the concept of "workable competition" in the following manner: "It does not mean purely competitive but instead, some degree of competition which is reasonably attainable and which can be expected to satisfy the needs of the consumer reasonably well (p. 32)." And Areeda (1981), perhaps with tongue in cheek, adds his own definition: "It is said that an imperfect market whose results are 'reasonably compatible' with 'general economic welfare' is 'workably competitive' (p. 131)." The term seems to have a great many definitions, which may account for Richard Low's (1970) observation that the concept of workable competition ". . . like many a human being, was born in glory, raised in triumph, and, subsequently, widely considered a failure. Considerable skepticism exists as to whether it can even be defined (p. 43)."

Notwithstanding the difficulty in defining the term, after Clark introduced the concept, there quickly resulted an explosion of sets of "minimal criteria." The expressed purpose of this criteria, submitted by numerous economists, was for judging the workability of competition (see Sosnick, 1958, for a review of this literature) and with the intent of making the classical economic models more operational.

An example will serve to clarify the "workable competition" approach. Scherer (1980) lists several representative norms used to judge the competitiveness of a market, the following is a sample:

1. The number of traders should be at least as large as scale economies permit. (Structural Criterion)

2. Firms should strive to achieve their goals independently, without collusion. (Conduct Criterion)
3. Profits should be at levels just sufficient to reward investment, efficiency, and innovation. (Performance Criterion) (p. 42)

Thus, as long as an industry met the above criteria (as well as others that might be listed) it would be judged to have "workable competition."

Critics of all economic/political stripes and from all points on the economic spectrum have leveled attacks at this approach to analyzing competition. Scherer (1980) reviews some of these charges, including the non-measurability of some of the criteria, the susceptibility of the criteria and their evaluation to value judgments, contradictory lists of criteria, and the issue concerning how to arrive at rational judgement when only some of the criteria on a list are fulfilled, while others are not.

These criticisms have led Markham (1950) to suggest an alternative approach to the concept of "workable competition." In lieu of attempting to evaluate industry structure and performance against a set of predetermined criteria, some of which may not be attainable and others which may not be measurable, Markham has proposed that:

. . . an industry may be judged to be workably competitive when after the structural characteristics of its market and the dynamic forces that shaped them have been thoroughly examined, there is no clearly indicated change that can be effected through public policy measures that would result in greater social gains than social losses (as reported in Scherer, 1980, p. 44).



Notwithstanding some of the same measurement and value judgement problems associated with the first alternative discussed, this approach seems less onerous in respect to identifying and reaching agreement on criteria that should be applied. In addition, it focuses attention on the policy implications of workable competition.

### Theory of Second Best

Like the "workable competition" model, the "theory of second best" is also an attempt to develop a more realistic and dynamic view of the classical economic models of competition. Areeda (1981), Turner and Areeda (1978), and Scherer (1980) describe, but do not endorse, the concept of the "theory of second best." It generally adheres to the idea of "countervailing power," as espoused by Galbraith (1952) and decried by Posner (1980) as the justification that is advanced on behalf of labor unions for the cartelization of labor markets.

Also like the concept of "workable competition," the "Theory of Second Best" seems to lack precise definition. Areeda (1983) describes it in the following manner:

More perfect competition in any one market might worsen resource allocation between markets. If monopoly prevailed in every market except wheat the economy would be producing too much wheat relative to other products. If wheat were also monopolized, the balance of output might better reflect ideal resource allocation. This possibility therefore raises this question: When pure competition does not and cannot prevail everywhere, what is the second best alternative--competition where that is attainable or 'equal degrees of monopoly' throughout the economy (p. 531).

Perhaps Posner's (1980) example lends additional insight to the concept:

. . . if one group of firms has market power, a cartel among those firms' suppliers might be thought to offset that power and to create a second-best solution. If there are monopolies in both markets, the argument goes, resources will not be

diverted from the monopolized market to the competitive market and the welfare loss will be avoided (p. 116).

The point here is not to argue the merits, validity, or superiority of either of the approaches to competition reviewed above, nor to suggest that these models exhaust the alternatives to the classical approaches. Neither is it the purpose to contend that these models have support beyond a relatively narrow circle of economists. Rather, the purpose of reviewing these approaches, "workable competition" and "theory of second best," is to illustrate the nature of the IO theorists search for more realistic approaches to markets and antitrust matters. This characteristic sets the IO Process Group strikingly apart from the Economic Efficiency adherents, who subscribe to the use of the classical economic models for analysis of markets and competitive situations, and has critical implications for antitrust policy.

#### Methods of Analysis

There is almost unanimous agreement among IO theorists that the "Chicago" analytic approach, based on classical economic models is not adequate for measurement purposes. Industrial Organization theorists reject the notion that microeconomic analysis can, as its proponents suggest, provide an objective, quantifiable, and value-neutral benchmark for the law. Many from the IO school would wholeheartedly endorse Flynn's (1977) mocking condemnation of the notion that economics has achieved such a degree of precision that it can be used alone to measure evidence and define policy.

Perhaps also in response to the uncertainties created by legal realism, some have even gone so far as to contend that the empirical evidence of the world objectively quantifiable and measured against a value-free economic model of 'efficiency' should be the sole test for defining antitrust policy, thereby freeing us at last from the heretofore frustrating vagaries of antitrust enforcement policy, judicial decision-making and legislative policy-making. All that is needed is a collective bending at the knee by bench and bar before the 'science' of economics, and a recognition that once and for all we have an objective tool that can lead us to truth, certainty, and an ideal world consistent with the hopes and aspirations of all (p. 1185).

Instead, IO proponents support the analysis and measurement of conduct-structure-performance variables with the use of multiple measuring tools.

Scherer (1980) lends insight when he asked, and then answered, the question: "How does industrial organization analysis differ from microeconomic theory?" He and other IO theorists believe that:

They differ mainly in the richness of the variables they attempt to subsume and in their concern for applying predictions and explanations to concrete real-world cases. Microeconomic theorists [i.e., "Chicago" theorists] thrive on simplicity and rigor; they are happiest when they can strip their models to the barest few essential assumptions and variables. Industrial organization economist are more inclined toward explanations rich in both quantitative and institutional detail (p. 2).

The "richness" that Scherer refers to above is attained through the analysis of a relatively large number of variables associated with structure-conduct-performance models of organizational analysis (e.g., see Exhibit 1-2, p. 23). According to these models, a set of basic conditions in a market will influence the structure of that market. The structure, in turn, will influence the conduct, and conduct will help determine a firm or industry's performance. Mueller (1976) gives a more concrete and lively example of this "chain of causation:"

For example, high concentration and high barriers to entry (both structural features) are<sup>8</sup> said to be conducive to price fixing (a form of behavior or conduct), which lead to artificially inflated prices and profits (an aspect of industry performance). In this view, most of the socially undesirable business practices involved in antitrust litigation are seen not so much as the doings of "bad men," acting out of socially reprehensible personal motives, as they are the fairly predictable activities of quite reasonable decision-makers following the logic of profit maximization along corridors rather clearly marked out by the basic structural features of their markets (pp. 90-92).

Therefore, IO proponents contend, to understand and predict the performance of firms in competitive environments, analysts must examine the variables associated with the elements of the "chain of causation." The result of this analysis of the structure-conduct-performance variables is the so-called industry study to which "Chicagoans" object.

There have been some alternative approaches to antitrust analysis recommended that focus on selected elements of the the basic conduct-structure-performance framework. These analytical approaches have led to some disagreement among IO theorists. For example, one area of disagreement concerns the need for examining the variables associated with conduct (e.g., strategy, legal tactics, investments of firms). Bain (1959), a structuralist, believes that "acceptable" predictions, and therefore policy, can be made on the basis of the relationships between the structure-performance variables. Thus, conduct variables are, not absolutely necessary in the analysis.

Further, according to structuralists such as Bain, as a practical consideration, analysis of conduct variables is frequently not possible. This is the case because much information concerning the conduct of organizations is not available to researchers and is likely to remain so because of the tendency of firms to tenaciously guard their internal

data and information from outsiders. Scherer (1980) disagrees with Bain on this point, believing instead that conduct variables must be included to add to the richness and predictability of the model.

Other IO proponents, as reported by Mueller (1976), believe that the focus of analysis should be on conduct variables only, recognizing that different business people will make different kinds of decisions in similar environments. Still another group believes that the focus of analysis belongs on the last stage of the "chain of causation," i.e., performance. Mueller suggests that proponents of this approach are content with the operation of firms and markets as long as performance measures up to some standard of "workable competition." Despite these relatively minor disagreements concerning the degree of inclusiveness of variables in the investigation, IO theorists are in general agreement that investigating more variables is better than investigating fewer (i.e., "Chicago" theorists tend to focus only on the conduct variables, the fewer the better, and use them in conjunction with the classical models).

### Industry Studies

One common I-O approach to analysis of antitrust concerns is the use of industry studies. These studies focus attention on the relationship between two or more variables in the structure-conduct-performance paradigm. Bain (1986), for example, supports a two-phase industry analysis program. The first phase involves formulating theoretical hypotheses concerning the relation of leading dimensions of the market structures of industries to their market performance. The second phase is aimed at testing these hypotheses with relevant observed relations of

empirical measures of structure and performance for groups of industries.

Specific examples of these types of studies abound. Weiss (1971) is one I-O analyst who postulates that there is the following relationship between market power and market performance: high levels of market power lead to high prices and high profits and poor industry performance. Market power is measured, in this instance, by the barriers to entry and level of market concentration that exists. There are many more studies, as reported by Mueller (1986), supporting Weiss' conclusions regarding the relationship between concentration and prices:

In financial markets--(Slater 1956; Edwards 1964; Bell and Murphy 1969; Aspinwall 1970; Jacobs 1971; Kessel 1971; Greer and Shay 1973; Heggestad and Mingo 1976; Rhoades 1977; Grady and Kyle 1979; Hester 1979; Marlow 1982) found a positive relationship between concentration and various proxies for price (e.g., checking-service charges, mortgage interest).

In food retailing--four studies using different methods, data, and time periods found a positive relationships between concentration and price levels (Marion, Mueller, et.al. 1979; Lamm 1981; Meyer 1983; Cotterill 1986).

In life insurance--Cummins, Denenberg, and Scheel 1972. In newspaper and television advertising--Landon 1971; Owen 1973; Thompson 1984.

Also in gasoline retailing (Marvel 1980); prescription drugs (FTC 1975); microfilm (Barton and Sherman 1984) all found a positive relationship between market concentration and prices.

(Mueller, 1986, p. 44-46)

It should be noted here that "Chicagoans" dispute the relationship between market concentration and prices. Analysts such as Demsetz (1974), Brozen (1971) and Peltzman (1977) argue that concentration promotes efficiency, not market power, and that the higher profits

observed by the IO analysts are the result of lower costs deriving from the higher level of efficiency.

#### Measures of Structure-Conduct-Performance

There are an almost unlimited list of variables and tools that might be used to evaluate the structure-conduct-performance variables. Some of the more common variables are depicted in Exhibit 1-2 on p. 23. Table 2-4, p. 108, shows several tools or methods that might be used to measure selected structure-conduct-performance variables. The tools identified in the Table are not meant to be an exhaustive listing, but rather are intended to serve as a simple illustration of some that might be used.

Moreover, it is unlikely that analysts would use a single measure to draw conclusions. They would more likely use two or more of the measures resulting from the application of these tools to identify relationships between variables and to increase the meaning and richness of the information. An example of this use of multiple variables can be found in the following excerpt from Scherer (1980): "We conclude . . . that the rapidity of innovation increases with the number of firms, and that sellers with small market shares are more likely to trigger a rapid pace of innovation than dominant firms . . . (p. 428)." Note that five separate variables are identified (pace of innovation, number and size of firms, market shares, and dominant firms) by Scherer as having a relationship to the innovation level of a firm (dependent variable) in differing industry situations. Other examples of the use of multiple

TABLE 2-4

## INDUSTRIAL ORGANIZATION MEASUREMENT METHODS

Model Focus	Variable Measured	Methods Of Measurement
STRUCTURE	Number of Sellers and Buyers	*Industry Concentration Ratios *Market Share Data
	Product Differentiation	*Specialization Ratio *Product Heterogeneity
	Cost Structure	*Measures of Economies of Scale; e.g., Profitability to Size Ratio *Transaction Costs
	Barriers to Entry	*Price Levels--e.g., Entry Foreclosing Price Levels
CONDUCT	Pricing Behavior	*Evidence of Coordinated Action, e.g., Bid Rigging *Predatory Pricing
	Product Strategy	*Brand Proliferation
	Research and Innovation	*R & D Expenditures *Number and Source of Patents
	Plant Investment	*Capital Employed per Worker
PERFORMANCE	Production and Allocative Efficiency	*Profit Levels in Industry
	Progress	*Innovation in Industry



variables are the studies of the relationship between market power (e.g., concentration level and barriers to entry) and profits discussed earlier.

### Policy Implications and Prescriptions

The policy implications and prescriptions of the IO process group are dependent upon which group of theorists one consults. That is, structuralists often have a different policy agenda than do those theorists who call themselves behaviorists, or than those who focus on conduct variables. This review of policy prescriptions is not an attempt to identify all of the numerous recommendations that have been forwarded in respect to policy, but rather concentrates on those most prominent in the literature. A review of Table 2-3, p. 92, shows the preferred policy approaches of several of the most prominent IO theorists.

The primary policy themes of the IO proponents seem to fall into four categories: 1) enforce antitrust laws currently on the books; 2) control market structures; 3) restrict specified conduct; and 4) remedy non-competitive performance. Each of these themes, with its attendant policy recommendations and potential implications should the policy prescription be adopted, is examined in the following section.

### Enforcement of Existing Laws

There already exists a body of law, supported by legislative action and legal precedents, that should be used to guide antitrust behavior. All that is required is a renewed commitment to antitrust enforcement by the enforcement agencies and the courts. This is a common theme that

runs across all of the agendas of IO theorists. Attempts to wholly rewrite or to reinterpret antitrust law (i.e., the efforts of Economic Efficiency proponents) should be resisted. As reported by Santangelo (1983), Judge Wood in *MCI Communications Corporation v. American Telephone and Telegraph* (1983) addresses this point:

With this rich history and jurisprudence stressing the wide ranging social concern of the antitrust laws, it is difficult to entirely understand the enthusiasm with which many embrace the theory that these laws stand only for economic efficiency . . . . While not negating the value of policy arguments based on efficiency, I am hesitant to abandon the jurisprudence and historical texture of the antitrust laws in order to embrace a set of seemingly hard and fast efficiency rules which present an illusion of conceptual and empirical tidiness (7th Circuit, 1983, p. 1153, Judge Harlan Wood dissenting).

Notwithstanding the debate concerning the goals and purposes of the original Sherman Antitrust Act, IO economists point to very clear purposes in the enactment of later antitrust laws and amendments. Bickel (1983) reports that the antitrust history of The Robinson-Patman Act, expressed a clear desire on the part of Congress to protect small businesses. Similarly, in enacting the Celler-Kefauver amendment to the Clayton Act (1950), Congress indicated its intention to prevent over concentration of business in the American economy. Each of these acts has been the foundation of a rich body of case law developed since the mid-1940's and these precedents ought not be rejected for the sake of a set of "contestable premises" that happen to be in "intellectual fashion" at the time (Judge Wood, 1983, *MCI v. AT&T*, p. 1153).

There are at least three critical implications associated with this policy prescription. The first would be a movement back toward the use of established case precedents and away from new, contrary

precedents based on Chicago economics. A second likely implication would be a reversion to traditional "per se" and "rule of reason" approaches, as opposed to the advocates of the Economic Efficiency-Classical Approach who urge a much more extensive use of the "rule of reason" criterion. Finally, it is likely that more cases would be judged on the basis of multiple goals including, but not limited to, economic efficiency.

#### Control Market Structure

The primary thrust of antitrust policy ought to be directed toward controlling the structure of markets, according to those IO theorists who call themselves structuralists. Liebeier (1978) has recounted the underlying rationale for Bain's (1951) "Market Concentration Doctrine" which represents the philosophical basis of the structural approach. Bain asserts that high and stable concentration in a particular industry results in monopoly profits. These high profit rates are assumed to be associated with market power, which, absent monopoly, implies some form of tacit or explicit collusion (Concentration-Profits Hypothesis). Market power, the ability to restrict output and to price persistently above long run average cost, is generally identified with an inefficient allocation of resources. High and stable industry concentration, then, through this line of reasoning, has come to be widely associated with such inefficiency.

The policy prescriptions for concentrated industries generally follow along two lines of thought: 1) deconcentrate the industry in question, and 2) remove the barriers to entry that make concentration possible. Deconcentration policy often involves breaking up the leading

firm(s) in an industry that exhibits persistently high levels of concentration, even when there is an absence of anticompetitive conduct. Bills aimed at the prevention of high and persistent industry concentration levels have been introduced over the years seeking dissolution or extensive divestitures in the case of conglomerate firms. The Concentrated Industries Act (1968), and Senator Phillip Hart's Industrial Reorganization Act (1973) are examples of proposals that have gone far beyond existing case law, calling for dissolution of leading firms where the four-firm concentration ratio exceeds 70 percent and 50 percent respectively. However, neither of these bills was passed.

In the case of "barriers to entry," structuralists would seek to remove, wherever possible, the barriers that are currently legal or institutional in nature. Examples of these types of barriers are certificates of public convenience and necessity, licenses, tariffs, quotas, "professional" qualifications, restrictions on advertising, and restrictions on price cutting. By removing government regulation in some of these areas, or by prohibiting their use when the barriers are not government sponsored, the entry into the markets by new firms will be supported and competition will increase. In instances when the barriers are not legal, (e.g., below cost pricing to keep out or drive competition from the market) the policy would revert to deconcentration or to policies aimed at conduct variables.

The implications associated with a deconcentration policy can be both positive and negative. For example, if the process is implemented and achieves successful results, more competitors will enter the market, driving down prices and profits and increasing consumer welfare. If, on

the other hand, a deconcentration policy is implemented but does not change the behavior of firms (i.e., size of firms is the result of efficiencies) the results could exhibit themselves in a variety of negative outcomes. For example: 1) there might be a more atomized industry with high prices (e.g., the break-up of AT&T) and dissatisfied consumers; 2) deconcentration might leave the United States with a domestic industry unable to compete with foreign firms, at home or abroad; or 3) deconcentration might create an industry that has too much competition, hindering the progress of large-scale technological development (see Slesinger and Kozik, 1967).

Mueller (1976) contends, however, that a deconcentration policy of the Neal or Hart type is a virtual political impracticality. He believes that: "The nation has an enormous reservoir of faith in the superiority of competition over monopoly (both single firm and collective), but this pool shows immediate signs of running dry the moment some 'radical' proposes a wholesale breaking up of the country's great oligopolies. Divestiture is considered by many too 'harsh' a solution to the problem (p. 129)." Rather, Mueller suggests that regulation or legislation aimed at reducing barriers to entry is the more probable course for reducing seller concentration and increasing competition (see also Bain, 1956).

#### Restrict Specified Market Conduct

Some IO proponents, rather than advocating the break-up of large firms, aim their policy prescriptions at the conduct of firms in the market. That is, when an illegal or behavior is detected, punishments

suitable to the transgression would be applied. Mueller (1976) explains the thinking of proponents of this conduct approach:

The 'conduct' approach to antitrust emphasizes the fact that business firms are directed by individual human beings, that humans differ widely in their 'psychological' makeup, and hence that there is no valid reason for believing that a particular 'stimuli' . . . will produce the same pattern of response ('conduct') in different businessmen. Therefore, in this view, the mere fact that the structure of the market is one that confers on its members both the power and the incentive to abandon competitive conduct doesn't mean they will necessarily do so (p. 93).

Consequently, breaking up firms because they merely have the ability to engage in anticompetitive behaviors is something akin to the presumption of guilt in the American legal system.

Market conduct variables, according to Mann (1974), include those practices which business people can employ to hinder and to exclude competitors. These practices might include one or more of the following types of antitrust offenses: trade boycotts, price conspiracies, allocation of markets, exclusive dealing arrangements, and the like. In Mann's view, oligopolists need not, as a general rule, resort to the familiar litany of antitrust violations to suppress competition, rather he would suggest that tacit understandings are sufficient. It then becomes the role of antitrust enforcers to supply evidence of the conduct in question.

"Chicagoans" would agree that conduct is an important dimension of antitrust. However, when evidence is not available to prove that the conduct has occurred (and often it is not), Posner (1976) believes that the relationships illustrated in classical economic models can be used as evidence. A more critical difference between the two schools of thought ("Chicago" vs. IO) relates to the nature of prohibited conduct.

That is, as discussed on pp. 87-88, adherents of the Economic Efficiency-Classical Approach believe that conduct relating to vertical restrictions between the firm, its suppliers, and its customers is a reasonable form of competition and ought to be legal "per se." In this regard, there are even some IO economists who would support the Chicago position on vertical restrictions (see Areeda and Turner, 1978). On the other hand, "Chicagoans" would agree that some horizontal restrictions should be prosecuted under the antitrust laws--depending on the likely impact of the horizontal conduct on the efficiency of the market in question.

The policy prescription of most IO economists (Scherer 1980; Bain 1968; Weiss 1967; Mueller 1976) would be to continue "per se" prohibitions against certain specified conduct: e.g., price fixing, division of markets, group boycotts and tying arrangements, reciprocal buying, exclusive dealing, and vertical mergers involving large market shares and collusive behavior. An additional policy prescription relates to conduct which is tacit, rather than express or overt. IO proponents would likely support a continuation of the "rule of reason" approach regarding activities such as pricing through conscious parallelism, coercive price leadership, and trade association price and cost reporting activities.

Liebeier (1978) discusses two implications when a "conduct" standard is used rather than a "structure" standard for evaluating market operations. The first implication is that the use of structure variables tends to discriminate against competitive superiority. On the other hand:

Conduct orders would clearly have an advantage over deconcentration if they could reduce collusion without dissipating the advantages of competitive superiority in the hands of larger firms. They also involve the potential for great harm if private treble damage actions were permitted to be brought solely on the basis of what might be quite tenuous economic evidence of tacit collusion. Private treble damage actions could well soon replace baseball or medical malpractice cases as the national sport (p. 1240).

However, a severe difficulty, when using conduct variables alone in evaluating antitrust, is in obtaining hard evidence of the suspected violation. As alluded to earlier, many (and perhaps most) firms are very careful about the type of information that is written, retained in company records, and voluntarily released to outside interests.

#### Remedy Non-Competitive Market Performance

There are also policy goals which are directed at the improvement of performance of firms and industries. These goals are designed to bring actual economic performance of firms and markets closer into line with the ideal economic performance. Mueller (1976) describes the "standard of performance" in relation to society's four major economic goals: 1) efficiency in production and distribution; 2) full employment with price stability; 3) high rates of progress in technology and productivity; and 4) equity in the distribution of income. He believes that efficiency (1) and progressiveness (3) are the relevant dimensions used to evaluate performance.

Other IO theorists have developed lists of performance standards prompting Slezinger and Kozik (1967) to attempt a listing of the most common elements on these lists:

. . . most economists agree that reasonable criteria for judging market performance should include efficient use of production resources, efficient use of selling resources,



lowest possible cost-price relationship, sufficient profit to reward investment, provision for necessary technological progress, and provision for necessary entrepreneurial innovations (pp. 113-114).

Their listing seems to be a more finite listing of the standards that Mueller includes on his list.

Policy prescriptions based on the "performance" standard would support the idea of examining the outcomes of a firm or industry to determine if and when remedies are needed. Areeda and Turner (1978) illustrate this approach when they recommend remedial action against concentrated industries, whether under existing antitrust provision or new legislation, only where there is proof of non-competitive performance. In the absence of this proof, they would take no action. Leibeier (1978) seems to support this same approach in discussing the problem of reconciling market power and efficiency (i.e., competitive superiority) in concentrated markets:

From a theoretical point of view, the attempt to reconcile the conflicting claims of market power and competitive superiority must ultimately be based on a trade-off among the adverse effects of market power, a loss in allocative efficiency, and the desirable effects of increased production and/or marketing efficiency which appears to be associated with competitive superiority (p. 1234).

Performance advocates would willingly evaluate these trade offs based upon their list of "performance" standards.

The implications of this approach include the use of performance standards that seem to be at odds with the structure and conduct standards previously reviewed. That is, use of the performance approach alone seems to show a high degree of skepticism regarding the ascribed relationships between performance, structure, and conduct. Mueller (1976) illustrated this thinking in his description of how those

supporting a performance standard would view the relationship between industry structure (i.e., degree of competitiveness) and industry progressiveness:

There is profound disagreement, however, on the question of whether there is a positive association between competition and progressiveness (high rate of invention and innovation). Indeed, some assert that there is a negative association--that some degree of monopoly power is absolutely essential if firms are to have the incentive and wherewithal to engage in the expensive and time consuming research and development programs that alone can produce inventive and innovative progress. . . . It is said to follow, therefore, that monopoly must be tolerated--even welcomed--as a handmaiden to economic progress (p. 97).

This type of disagreement seems to be heard more frequently, and, at times, those supporting a performance standard seem more in agreement with the "Chicago" theorists than with other IO theorists.

#### Selection of A Standard

One of the problems that must be resolved by IO proponents is lack of recognized standards which can be used to judge antitrust matters. Given the three standards suggested above and an implied eclectic fourth standard (including all three elements of the conduct-structure-performance model), there is some debate concerning which is the most appropriate to use. Mueller's (1976) comments below address the underlying conflict within the IO school in respect to the use of one of the standards in the absence of the other two. The context of his comments relate to his recognition of the similarity between the lists of "standards of performance" and those lists of criteria developed for the concept of "workable competition" (see p. 100):

Indeed, if workable competition is defined as the closest feasible real world approximation to the competitive model--as it is frequently so defined--then even the 'structuralists'

could perhaps subscribe to it. But when workable competition is identified with the 'performance' approach exclusively, or even primarily, it takes on a quite different character. In substance, this latter approach denies that there is a significant causal relation between market structure, on the one hand, and conduct and performance, on the other. In this view, the antitrust authorities and the courts should go to the end of the chain and examine directly the matter that's really of primary interest to society, namely, performance. If performance is good, then--by definition--all of the market forces that are worth worrying about, including competition, are obviously functioning in a 'workable' manner. The premise here is that an industry's structure and conduct, insofar as they are socially relevant at all, are to be inferred from its performance, not the other way around. The idea, in short, is that 'by their fruits ye shall know them' (p. 95).

This issue extends beyond Mueller's comments about the performance standard, however. For example, just as those from the performance approach would look primarily or exclusively at performance measures, structuralists would deconcentrate an industry without regard to conduct or performance. In both instances, the IO theorists (e.g., Scherer 1980, Mueller 1976, Williamson 1979, and Bain 1986) who support the idea of a "chain of causation" and aim their efforts at examining and discovering the relationships between structure-conduct-performance variables, seem to be slighted or perhaps even rejected.

A hypothetical example of the impact of selecting one standard over another, or of selecting one standard rather than looking at all three of them, illustrates the difficulties. Take, for example, the matter of concentration and profits (a favorite topic of the structuralists). High concentration in an industry leading to persistently high profits would be sufficient to elicit calls for deconcentration from the structuralists. Supporters of the "performance" view might instead look at this same phenomena in respect to its impact on the

efficiency and progressiveness of the industry, and conclude there is no problem. Meanwhile those primarily committed to a conduct standard would look for evidence of the illegal conduct which had led to the monopoly profits and in their searching might encounter the contradiction suggested by Leibeier (1978):

More important, it will be shown that the theoretical explanation of such a correlation, even assuming that it does exist and persist over time, is ambiguous. While high industry concentration and high profit rates may be consistent with collusion, which they must be in order to be tied to welfare-reducing market power, they may also be explained by factors that have nothing to do with collusion. The most important of these alternative explanations is the existence of comparative advantages or competitive superiority in the hands of the larger firms in the industry (p. 1234).

The "behavioral" IO economists would insist that the causal chain is the appropriate approach to analyzing and dealing with antitrust problems. They would also be likely to agree that the disagreements among IO economists relating to the selection of a standard, symptomatic of the absence of common understanding, prevents a more unified approach toward battling the "Chicago" philosophies.

#### Social-Political Values Group

There are, as was explained earlier, two subcategories, within the Multiple Goals-Situational Approach. One of these, the Industrial Organization Process Group is reviewed in the sections above. This section introduces the second subcategory, the Social-Political Values Group. Supporters of this viewpoint differ from the IO theorists in one critical respect, the importance they attach to the non-economic goals of antitrust in relation to the economic goals. That is, the IO theorists agree that non-economic goals are important, but they tend to

place these goals subordinate to economic goals. According to Sullivan (1975), non-economic goals might be used in an "everything else being equal" tie-breaker situation. The Social-Political group, on the other hand, believes that economic goals are one set of goals among many, some of which may have equal or greater value, depending on the situation. Thus, economic goals should be viewed as being on an equal footing with goals such as the decentralization and dispersion of economic and political power, the protection of small businesses, and economic freedom.

Hofstader (1968) addresses the relationship between political and economic ideas in antitrust in the following comment:

What makes it possible to institutionalize antitrust activities at the higher plateau that has been maintained since 1938 is not a consensus among economists as to its utility in enhancing economic efficiency, but a rough consensus in society at large as to its value in curbing the dangers of excessive market power. As in the beginning, it is based on a political and moral judgement rather than economic measurement of even distinctively economic criteria (p. 233).

Table 2-5 shows some of the prominent supporters of the Social-Political Values approach, their assumptions, suggested methods of measurement, and prescribed antitrust policies.

#### Differences With Chicago

Although proponents of the Social-Political Values approach to antitrust differ somewhat with the IO theorists, their differences with the supporters of the Economic Efficiency-Classical Approach are much greater. There are a number of arguments members of the Social-

TABLE 2-5: MULTIPLE GOAL-SITUATIONAL APPROACH/SOCIAL-POLITICAL

PRINCIPAL SPOKESPERSON/THEORIST	PROPOSITIONS/ASSUMPTIONS	METHODS OF ANALYSIS	IMPLICATIONS/ POLICY DESCRIPTIONS
Pitofsky (1979)	Economic power will breed anti-democratic political pressures; goal of antitrust is to preserve a competitive process which will, in turn, protect small business against unfair practices.	Empirical-evaluation of variables against a clear set of rules	Preservation of competitive process with a goal of dispersed power Affording protection to small business Balancing economic vs. political goals
Sullivan (1977)	Antitrust aims at values other than economic efficiency; economic approaches alone fail to consider welfare consequences of changes in technology and industrial structure.	Evidence of law-perceptions; objectives, memos, internal correspondence of corporate officers.	Use conventional law to determine intent
Blake and Jones (1965)	Antitrust operates to forestall concentrations of economic power and political power and to promote individual liberty.		Possible efficiencies should be sacrificed when the impairment of market processes seems imminent or when asserted efficiencies are not persuasive
Galbraith (1971); Reich (1970); Heilbroner (1972); Tanzer (1971)	Social goals ought to have first priority status in antitrust	Measures should be multi-dimensional and might include the following: inequality; allocation of political power; quality of environment; social statistics; social auditing;	External supervision and participation in corporate policymaking Development of a 'public utility' type duty

Political (S-P) Values Group address to the "Chicago" approach, including its simplistic assumptions, its faulty logic, its lack of relevance, and the absence of a humanistic approach.

Several prominent economists support the criticism regarding the simplistic assumptions that "Chicagoans" make concerning individual behavior. For example, Leff (1974) questions the validity of assumptions that rely on rational maximization as the sole motivating force of humankind; Baumol (1967), contends that group interaction defies easy categorization; Hirsch (1976), wonders whether individuals really make rational decisions; Mishan (1977) believes that microeconomics fails to account for the dynamics of human behavior; and Schumpeter (1950) suggests that self-interest is a capitalistic notion that merely justifies wealth accumulation.

As an aside, Posner (1979) defends the rational maximization assumption, first, because ". . . introspection provides the only reliable evidence of motivation; at the level of unconscious, it appears, without being a Freudian, that humans act out of self-interest (pp. 302-303)." Secondly, even though the assumptions of human behavior may be unrealistic, ". . . they do not falsify the studies that utilize them (p. 303)."

Flynn (1983) argues that the "Chicagoans'" are using faulty logic when they view economics as a concise science simply because its hypotheses are generally valid (see Posner above). This thinking is fallacious, because economics, ". . . is based on deductive reasoning, inferring factual situations from general metaphysical propositions. Legal analysis is inductive, it reasons from the specific to the

general. . . . [which] makes it [i.e., economics] an inappropriate substitution for legal analysis (p. 885)."

Further, Flynn (1983), takes the Economic Efficiency proponents to task for their circular arguments and simplistic assumptions:

Since microeconomic theory presumes that whatever decision is made is rational, one need not make any qualitative judgments on any given choice. ('The individual's perceived reason for a choice is irrelevant [under microeconomic theory], so are the moral, psychological, or other constraints influencing the choice.') Rational maximization of self-interest is the only behavioral or psychological explanation of individual action (p. 884).

Leff (1974) and Brodley (1971) similarly observe the circular logic used by the "Chicagoans." Brodley observes of McGee (1971) that ". . . what McGee asserts is that we know big firms are superior simply because they are big! Markets are 'biased toward efficiency . . .' and market results are evidence of efficiency (p. 1165)."

Supporters of the Social-Political Values Group also contend that the orthodox market configurations, i.e., the type supported by the theories of the Economic Efficiency-Classical Group, are out of touch with contemporary needs. That is, the "Chicago" models lack relevance. For example, Austin (1972) contends there is ". . . a spreading belief that, as a methodological discipline, economics has failed to furnish workable guidelines and standards for allocating resources in the best interests of society (p. 907)." This belief is echoed by Sullivan (1975) in his criticism of the "Chicago" school economists:

Absent the simultaneous fulfillment of all conditions of optimum allocation save one, which it is assumed can be corrected, economic theory tells us nothing about how to improve resource allocations. Since the real world never meets these theoretical presuppositions, the theory simply gives no guidance for improving real world allocations (p. 1224).



Still other economists criticize the "Chicagoans'" approach because of its movement away from humanistic concerns. Brodley (1971) reflects these concerns contending that: "What cannot be registered in the classical system is the consideration that whatever gain might result from higher productivity would be more than offset by the cruelties inflicted. And the 'costs' would be borne not only by the victims, but by all of us who would have to exist in such a desensitized world (p. 1175)." He continues, drawing on the work of Fusfeld (1972) and Hurst (1970): "The 'iron law of competition' of classical economics turns out to be simply too Prussian a value to guide our economic lives (p.1175)."

#### Alternative Values and Goals

There are numerous lists of "goals of antitrust" which include both economic and non-economic outcomes (see for example, Handler, Blake, Pitofsky, and Goldschmid, 1974; Areeda, 1981; Blake and Jones, 1965; and Sullivan, 1975). Spivack's (1982) list of goals is fairly comprehensive and includes most of the outcomes contained, in one form or another, on other lists. He believes that in addition to the goal of economic efficiency, Congress designed the antitrust laws:

- \*to preserve a deconcentrated industrial structure;
- \*to disperse economic power;
- \*to provide free access to markets;
- \*to foster individual economic freedom;
- \*to encourage local ownership of business;
- \*to provide self-policing markets and thus reduce the need for government control;

\*to promote fairness in economic dealings; and

\*to lessen inequalities in economic conditions; (p. 653)

Spivack's listing specifies some outcomes that most economic theorists would agree are reasonable expectations for our antitrust laws. For example, both "Chicagoans," and members of the "Harvard" school would argue that their approach to antitrust fosters "free access to markets" and "fairness in economic dealings." However, there are other goals on Spivack's list that are primarily political or social in respect to their outcome (e.g., "to encourage local ownership of business"). It is these latter types of goals that create the greatest area of controversy between the antitrust theory schools.

There are within the Social-Political Values Group two distinct sets of goals. One group of goals is oriented toward social and societal values. The other group of goals seek to attain specific types of political outcomes from the antitrust laws and legal process. Theorists who support either set of goals are combined into the same group (Social-Political Values Group) for the purposes of this review, because they often support both sets of goals. However, the goals, assumptions, and policy prescriptions are different enough so that each will be discussed separately below.

#### Societal Values And Goals

One of the primary goals that those within the Social-Political Values Group support is the infusion of social and ethical values into the fabric of antitrust law. These proponents want to make sure that business firms, government regulators, legislators lawyers, economists, and others are as concerned with the social effects of antitrust as they

are with the economic effects. Sullivan's (1975) comments reflect this view:

The static models of economics fail to illuminate antitrust's role as a response to, and later as a mediator of the profound changes in technology and industrial structure that have occurred in America over the course of the present century. . . . Yet one suspects that no such study based on conventional modes of economic analysis would take account of the non-material and less readily quantifiable welfare consequences of the change in technology and industrial structure. Americans today live out their lives in a vastly different world than that of their fathers and grandfathers. . . . Many of the forces that now affect them [the American public] are less personal, more remote, than they used to be. A people may care about these changes as well as about changes in efficiency and market power (p. 1220).

There are many within the Social-Political Values Group who want to see America's giant business organizations reflect the values of the American people. For example, Supreme Court Justice Douglas has said:

The modern super corporations . . . wield immense, virtually unchecked, power. Some say that they are 'private governments,' whose decisions affect the lives of us all. The philosophy of our times . . . requires that such enterprises be held to a higher standard than that of the 'morals of the marketplace' which exalts a singleminded, myopic determination to maximize profits as the traditional be-all and end-all of corporate concern . . . (SEC v. Medical Comm. for Human Rights, 1972, p. 403, [dissenting opinion]).

Santangelo (1983) is one who shares Justice Douglas' view that firms, particularly large ones, ought to be held to a standard higher than efficient economic performance. He reports support for this position from others, such as Weisskopf (1971), who believes that the: ". . . worship of economics obscures the focus of the legitimate goals of society by eliminating any burden on the corporation to evaluate its ethics (p. 886)." Weisskopf (1971), also believes that:

. . . the appalling vice of the 'fictional' determinism that profit maximization insures an impersonal market is that it ignores reality and consequently eliminates any burden on the

corporate establishment to evaluate the morality of its conduct. The result is the illusion of consumer sovereignty operating under the auspices of a counterfeit model of determinism justifying an economic system barren of values (p. 118).

The Social-Political Values Group want to ensure that concern for values, morals, and ethics are not left out of the antitrust deliberations.

### Antitrust Goals

Societal antitrust, according to Austin (1972), exalts socio-political judgments to a first priority status. This contrasts, he believes, with the tradition of neutrality and moves antitrust toward an enforcement policy which is keyed to socio-political criteria. Examples of the societal antitrust philosophy are discernable in a growing list of proposed antitrust goals, violations and exemptions (Austin, 1972):

On the premise that persuasive advertising is socially wasteful, and therefore harmful, the Federal Trade Commission (FTC) has mounted an all-out war on advertising *qua* advertising (Austin, 1971). The Yale Law Journal (1971), joined by Ralph Nader (Antitrust Law and Economics Review, Fall, 1970), petitioned the FTC to declare the annual automobile style changes an unfair method of competition. Senator Hart (1971) has argued that violations of environmental laws or safety standards are prescribable as unfair methods of competition under Section 5 of the FTC Act. Senator Harris (1971) would attack market concentration as a means of stimulating technology, reducing poverty, crime and unemployment and achieving an equal distribution of income, while others would deconcentrate to erase racial discrimination or dehumanizing assembly lines (p. 905).

Schwartz (1979) notes the social bent of antitrust, suggesting that ". . . it is easy to detect the fourteenth amendment theme of 'equal protection of the laws' (the private commercial laws enacted by dominant firms and oligopolists) in the legislation against price and service discrimination. . . Others have noted as relevant to the debate over

concentration that there is evidence that monopolistic enterprises discriminate against blacks more frequently than competitive enterprises (p. 1079)."

At times even the Justice Department has supported the societal antitrust movement. This was the case, for example, when McLaren (1969), Antitrust Division Chief, gave as one of his agency's chief reasons for attacking conglomerates the fact that mergers have a "human resource depletion" effect in draining small towns of their best professional people.

#### Societal Goals Measurement

In examining the methods of measuring non-economic, societal goals, it becomes evident that these methods are rather less well defined and "precise" as is the case for the approaches suggested by the Economic Efficiency school. However, supporters of the societal goals for antitrust believe that the precision of the "Chicago" approach is an illusion and leads to poor results. Austin (1972), for example, believes he fairly represents the view of other critics in their view that ". . . mathematics and statistics, the economists' basic tools to evaluate and measure achievement and progress, have a built-in bias toward excluding nonquantifiable policy considerations. As a consequence, when business and government take the economists' advice, they often emerge with illegitimate objectives and priorities (p. 911)."

Roberts (1972) also reflects these concerns that under the conventions of an overly technical methodology ". . . smog, dirt, pollution, noise, ugliness . . . are simply ignored (p. 46)." Finally, Weisskopf (1971) concurs pointing out that: "In this system, worship of the

means--science and technology under the code word 'efficiency'--totally obscures focus on the legitimate goals of society (p. 92)."

In lieu of the more formalized and statistical approach to measurement, supporters of the societal goal approach to antitrust would, according to Austin (1972), include a variety of unconventional measures. He believes that these supporters will look for better tools to measure the "true" economic impact of firms' actions on society. Several economists, for example, Sullivan (1977), have suggested that other, "more humanistic" value sources be used to evaluate antitrust behavior. Thus, social science disciplines such as sociology, psychology, political science, the humanities, and history might be used to help evaluate antitrust issues. However, a weakness with this approach is that specific tools for measuring behavior or effects often are not available in these social sciences vis a vis antitrust concerns.

However, notwithstanding measurement difficulties, Austin believes that a new view will gain currency. One which includes not only measurements of ". . . average per capita income but also measurements of inequalities, allocation of political power, quality of environment, etc., . . . Phrases like 'social statistics' 'social auditing', and 'energy accounting' foretell a greater effort to quantify those intangibles associated with a humane economy (p. 912)."

#### Policy Implications and Prescriptions

The policy prescriptions supported by proponents of the Societal Goals approach to antitrust vary widely. Some support complete government control or dissolution (e.g., J. K. Galbraith's recommendation that firms specializing in government work be nationalized).

Others would settle for less Draconian solutions to antitrust problems (e.g., restrictions on advertising and prohibitions on frequent model changes in automobiles). Two proposals are briefly examined below for the purpose of attaining a better understanding of the societal approach.

One proposal discussed by Austin (1972) and supported by several economists (see for example, Hetherington, 1969; Manning, 1960; Berle, 1932; and Dodd, 1932) would attempt to impose a public interest responsibility on large oligopolistic firms:

There is general agreement among reformers on one blueprint for change: The corporate sector's success in power aggrandizement and in shielding its activities from external accountability should subject it to a type of public utility duty, imposing on the managerial hierarchy a strict fiduciary responsibility to the public. Given this public interest charge, external supervision and participation in corporate policy making become necessary means of preventing or remedying breaches of the corporate fiduciary duties (p. 913).

Thus large firms, without regard to how they achieved their monopolistic or oligopolistic status within an industry, would be held accountable to a public utility responsibility. This characterization Austin reports, might be based on: 1) whether the enterprise or trade operated as a "virtual" monopoly which shut off reasonable alternatives to customers, and 2) whether the public, in event of injury, had a viable means of obtaining legal redress.

A second kind of policy approach aims not at government control, as above, but rather at using antitrust as an instrument of reform for society and the economy. This line of thinking is reflected in Nader's (1971) statement:

It may not be too sanguine to say that from the present on, antitrust and its brace of phrases will start to become household words; that the prices people pay for their bread, gasoline, auto parts, prescription drugs and houses will be more and more related to antitrust violations and the costs of concentration; that the air they breathe and the consumer hazards they suffer will be increasingly connected to industrial collusion and controlled markets; that those aggrieved by antitrust violations will more and more directly reach towards the companies and their executives for suitable redress and other sanctions through the courts. . . (p. iv).

Since shareholders have very little real impact on corporate boards, and because it is difficult to move shareholders to action in the interest of reform (see Blumberg, 1971), antitrust changes will have to come through actions by the court system. The interpretative latitude, suggests Austin (1972), inherent in the fluid guides like "rule of reason" and "incipiency" can be powerful tools in the hands of a judiciary intent on reform.

An example of one such approach to reform is reported by Austin. He contends that allegations might be shaped to exploit the courts' tendency to sift illusive facts through a priori theory, thereby avoiding the entanglements of evaluating a large body of economic data with uncertain meaning. Then, it becomes a relatively easy jump from:

. . . proof of the existence of conduct considered socially undesirable by reformers to a finding of an adverse effect on competition . . . by resort to the abstractions of theory. For example, an argument could be advanced that any substantial expenditure on advertising should trigger proscription on the a priori reasoning that, under industrial organization theory, it is likely to have some, adverse effect on condition of entry. The actual or probable impact on competition is largely irrelevant to the social waste occasioned by advertising, but would nevertheless be assumed under the decree of economic theory (p. 919).

The necessary ingredient in this scenario, however, is a judiciary with social and economic reform of antitrust as its primary agenda item.



Achieving a judiciary with these characteristics will be no small feat for the societal goal advocates.

#### Political Values and Goals

The proponents of the political approach to antitrust are in general agreement with the supporters of societal values, however, the focus of their concerns differ. The "political values" supporters have as their primary purpose the retention and strengthening of the populist/democratic values of antitrust (e.g., dispersion of economic power and the protection of small competitors). As suggested by Santangelo (1983), these political values are deemed important enough by supporters to outweigh, in given circumstances, economic values: "Thus, the antitrust laws were based upon the recognition that without governmental intervention, the theory of classical economics would lead to antidemocratic institutions. Consistent with this recognition, courts may sacrifice perceived efficiencies in a given situation to preserve the overriding values that make economic competition desirable (p. 889)."

#### Antitrust Goals

The Political Values approach to antitrust differs markedly from the Economic Efficiency school. Political Values theorists rely heavily upon social, legal, and legislative history (i.e., precedent) in arguing antitrust policy questions. For example, Blake and Jones (1965) contend that the original Sherman Act was a populist reaction against large accumulations of power and for economic democracy. They cite Senator Sherman's own words in underscoring their point:

The sole object of [a trust] is to make competition impossible. It can control the market, raise or lower, prices, as will best promote its selfish interests, reduce prices in a particular locality and break down competition and advance prices at will where competition does not exist. . . . If the concentrated powers of this combination are entrusted to a single man, it is a kingly prerogative, inconsistent with our form of government, and should be subject to the strong resistance of the State and national authorities. If anything is wrong this is wrong. If we will not endure a king as a political power we should not endure a king over the production, transportation, and sale of any of the necessities of life. If we would not submit to an emperor we should not submit to an autocrat of trade, with power to prevent competition and to fix the price of any commodity. . . . (21 Cong. Rec. 2457, 2460, 2569; 1890).

Further, supporters of the "political values" approach would agree with Santangelo (1983) in his belief that, if Congress was not clear in its intent concerning the passage of early antitrust law, the subsequent passage of amendments and additions to the Sherman Act provides additional evidence that Congress intended the antitrust laws to assume a broad political and social function.

Pitofsky (1979) outlines the arguments and values (goals are implicit) that many supporters of the Political Values approach (see, for example, Sullivan, 1975; Handler, Blake, Pitofsky, and Goldschmidt, 1975; Blake and Jones, 1965; and Schwartz, 1979) would agree are most critical:

It is bad history, bad policy, and bad law to exclude certain political values in interpreting the antitrust laws. By 'political values,' I mean, first, a fear that excessive concentration of economic power will breed antidemocratic political pressures, and second, a desire to enhance individual and business freedom by reducing the range within which private discretion by a few in the economic sphere controls the welfare of all. A third and overriding political concern is that if the free-market sector of the economy is allowed to develop under antitrust rules that are blind to all but economic concerns, the likely result will be an economy so

dominated by a few corporate giants that it will be impossible for the state not to play a more intrusive role in economic affairs (p. 1051).

Blake and Jones (1965) also address some of these same issues and suggest two prime political objectives for antitrust: 1) the preservation of self-policing markets, with a view of minimizing both public and private government; 2) the protection of individuals from oppression and the foreclosure of opportunities by economically powerful interests. There are common themes which run through both Pitofsky's list of values and Blake and Jones political objectives which are examined more fully in the following sections.

A Minimum of Political Interference. Blake and Jones tie this objective together with Pitofsky's "Fear of Concentrated Economic Power" value by their suggestion that ". . . antitrust operates to forestall concentrations of economic power which, if allowed to develop unhindered, would call for much more intrusive government supervision of the economy (p. 383)." Thus, it appears that our distrust of power includes both political and economic power concentrated in private or government hands. "The great virtue of the competitive process," according to Blake and Jones (1964), "is that it makes possible the attainment of a viable economy with a minimum of political interference. It largely polices itself (pp. 383-384)."

Because of a fear of accumulations of power, it is argued, antitrust laws and their interpretation by the courts have frequently been used to curb, where possible, any unnecessary concentrations of economic power. Judge Learned Hand's explanation in the *United States v. The Aluminum Co. of America* (1945) clearly shows this line of

thinking as he explains that ". . . great industrial consolidations are inherently undesirable" for political as well as economic reasons (p. 416)."

Pitofsky (1979) argues that Congress has, in its antitrust amendments, exhibited a clear disdain for large corporation and conglomerate power. He contends that Congress has a concern that ". . . an economic order dominated by a few corporate giants could, during a time of domestic stress or disorder, facilitate the overthrow of democratic institutions and the installation of a totalitarian regime (p. 1054)." Schwartz (1979) believes that this concern is the very reason that the United States imposed antitrust measures on post World War II Japan and Germany that ensured industrial deconcentration. It is his view that the dominant motivation for this action was political: ". . . a desire to create alternative centers of power that could not readily be marshalled behind authoritarian regimes (p. 1078)."

This theme of economic democracy is further supported by Lindblom (1977) and by rulings handed down by the Supreme Court. Lindblom postulates that:

[Democracies] are systems of rules for constraining rather than mobilizing authority. They grow out of a struggle to control authority rather than to create it or make it more effective. They are therefore political systems that are, again, like markets. They practice decentralization, diffusion of influence and power, and mutual adjustments so that individuals in small groups rather than national collectivities can strive for whatever they wish (p. 165).

The Supreme Court has often supported this theme of the close connection between economic freedom and democratic freedom. Justice Marshall (1972) reiterates the notion of the Sherman Act serving as the Magna Carta of the American business system:

Antitrust law in general and the Sherman Act in particular, are the Magna Carta of free enterprise. They are as important to the preservation of economic freedom and our free enterprise system as the Bill of Rights is to the protection of our fundamental personal freedom. And the freedom guaranteed each and every business, no matter how small, is the freedom to compete--to assert with vigor, imagination, devotion, and ingenuity whatever economic muscle it can muster. Implicit in such freedom is the notion that it cannot be foreclosed with respect to one sector of the economy because certain private citizens or groups believe that such foreclosure might promote greater competition in a more important sector of the economy (United States v. Topco Assoc., Inc., p. 596).

Elzinga (1977) reminds scholars that Friedrich A. Hayek and Milton Friedman, among others, have also argued the intractable relationship between individual freedom and a competitive market economy.

The Protection of Individuals and Businesses. This political objective closely relates to the manner in which competition occurs at the micro level. That is, issues, such as the protection of competitors and the propriety of vertical restraints on competition, come to the foreground in a discussion of questions pertaining to the protection of individuals and businesses. Professors Blake and Jones (1965) address these competitive issues:

Can it seriously be doubted that the primary motivation of Congress in enacting the Sherman Act and every significant amendment was concern about the abusive behavior of economic giants, real or imagined, and sympathy for their victims, consumers and businessmen deprived of alternatives and opportunities? . . . To be sure, it was not the purpose of the antitrust laws to create the havens for inefficient small businessmen that the new critics so vigorously condemn. But it was the purpose of the antitrust laws to expand the range of consumer choice and entrepreneurial opportunity by encouraging the formation of markets of numerous buyers and sellers, assuring ease of entry to such markets, and protecting participants--particularly small businessmen--against exclusionary practices (p. 384).

Schwartz (1979) agrees with Blake and Jones, but adds his own twist to the discussion, ". . . antitrust laws protect competition not competitors . . . unless individual competitors must be protected in the interest of preserving competition . . . they may be seen as a congressional concern for a non-economic goal: 'justice' in the sense of fair and equal treatment of persons in like situations (p. 1078)."

This view is supported in court decisions and in legislation that seem to conclude that concentrated economic power erodes the American competitive system. Therefore, as Schwartz concluded above, the protecting the competitive system may require the protecting individual competitors. For example, in the case *Brown Shoe Co. v. United States* (1964), the Supreme Court stated: ". . . we cannot fail to recognize Congress' desire to promote competition through the protection of viable, small, locally owned businesses. Congress appreciated that occasionally higher costs and prices might result from the maintenance of fragmented industries and markets (p. 294)."

#### Political Goals Measurement

As is true with the Societal Goals approach, critics would say (e.g., Elzinga, 1977) the Political Goals approach say suffers from measurement problems. Agreeing with the Societal Goals approach, Political Goals supporters point to the illusion of precision in measurement and certainty of outcomes associated with the economic efficiency approach. Pitofsky (1979) addresses these two points, indicating, in reference to the first point that: "Those opposed to the inclusion of political factors exaggerate the precision of an enforcement approach that incorporates solely economic concerns, and overstate

the administrative difficulties and enforcement costs of taking non-economic concerns into account (p. 1065)." In respect to the latter point concerning outcomes, Pitofsky believes that:

. . . even if economic theory were clear and consistent, economics provides no system for reliably determining economic effect. We know that a market served by fifteen or twenty firms that is converted by merger to a monopoly or duopoly will produce a different level of price and perhaps efficiency. In contrast, a merger in a ten-firm market between the sixth and eighth firms reduces the total number to nine but allows the combined enterprise to challenge the leaders more effectively. There is no reliable way to determine either the pro- or anticompetitive effect of that merger with anything approaching scientific reliability. As a result, antitrust enforcement along economic lines already incorporates large doses of hunch, faith, and intuition (p. 1065).

Leff (1974) seems to agree with Pitofsky that economic analysis lacks some reliability, stating in a somewhat lighthearted manner: "If a state of affairs is the product of  $n$  variables, and you have knowledge of or control over less than  $n$  variables, if you think you know what's going to happen when you vary your variables, you're a booby (p. 60)."

Sullivan (1975), a supporter of the Political Goals approach, in a review of the Pitofsky, Handler, Blake and Goldschmid (1975) antitrust book, addresses the problems of measurement using the Political Goals approach:

. . . [a weakness of the text is its] failure to address the gap between the mere identification of such processes as those stressed in the introductory chapter and the development of modes of analysis which might enable courts and lawyers to articulate and apply rules of law to serve the policy goals identified or suggested there. . . . Vague populism does not provide a particularly useful guide to, let alone a rule of, decision. Even a sensitive historical perspective, however much it may aid both in an understanding of law as a social institution and of the interplay between law and other institutions, cannot be expected to yield usable legal doctrine. The main reason, perhaps, why economics has held the field is that it does provide an analytical system, a methodology, a usable approach (p. 1222).

Notwithstanding this criticism, there have been some attempts made to specify techniques for handling the measurement problem.

Pitofsky (1979) offers one approach to measuring that is consistent with the Political Goals approach. It is a method that would attempt to evaluate antitrust issues through the examination of the efficiency/political trade-off equation. Thus, Pitofsky suggests that we might measure the potential competitive injury of a practice rather than relying solely on the efficiency standard suggested by the "Chicago" school. He justifies the inclusion of this "less precise" measure by indicating that: ". . . an essential notion of the political goals of antitrust--that the matter of efficiencies is not dispositive, and that an occasional loss of efficiency as a result of antitrust enforcement can be tolerated and is to be expected if antitrust is to serve other legitimate values (p. 1074)." He supports this view with a statement by Justice Brandeis in a dissenting opinion for *United States v. Columbia Steel Co.* (1934): "The only argument that has been seriously advanced in favor of private monopoly is that competition involves waste. . . . Undoubtedly competition involves waste. What human activity does not? The wastes of democracy are among the greatest obvious wastes, but we have compensations in democracy which far outweigh that waste and make it more efficient than absolutism (pp. 534-535)."

The net result of this approach would be an attempt, for example, at determining the minimum level at which a lessening of competition or a tendency toward monopoly will occur as the result of an action such as a merger. A set of guidelines or rules (e.g., merger rules or merger guidelines) would then be developed that would be used to evaluate



particular behaviors that fall within the antitrust domain. For example, there would be identified threshold levels of illegality for merger actions. The measuring device might, therefore, consist of a range of market share that would permit or prohibit a merger. Pitofsky recommends that these standards governing merger enforcement be somewhat flexible: "If the 'incipiency' dimension of Section 7 is taken into account, and if it is recognized that it is virtually impossible as a matter of economics to describe precisely at what point concentration produces conditions that facilitate collusion, one can persuasively argue that the threshold level ought to be well below the four-firm/sixty-percent level (p. 1070)."

A second approach to measurement is one which seeks to measure conduct. Sullivan (1977) seems to support this approach: ". . . there are obvious factors to be examined in addition to price-cost relationships. A firm seeking to expel or exclude rivals by selling at unremunerative prices will leave traces; it will have gathered market information, considered it, and decided upon a course of conduct to attain its socially disapproved end (p. 43)." Further, Sullivan believes: "To contend that the conventional formulation of predatory conduct, which looks, in a sense, for evil, ought to be amended to one that looks solely to an effect validated by economic studies is to assume too much about the precision of applied economics and to assume too little--not just about the constraints on a trier of fact--but about the value of more humanistic modes of inquiry (p. 1230)."

It seems obvious that the debate concerning the reliability/validity of measuring methods and approaches will continue to be at the

forefront of antitrust issues. This is particularly true because the method of measuring is very closely interrelated with the policy prescriptions.

#### Policy Implications and Prescriptions

The policy prescriptions of the Political Goals approach generally correspond to what Pitofsky labels, "the preservation of a competitive process." However, many, if not all, of the schools reviewed in this chapter might also lay claim to that label. Consequently, a review of some of the policy prescriptions of supporters of the political goals approach will illuminate their particular view of what it takes to maintain a competitive system.

Professors Blake and Jones (1965) have suggested that ". . . because economic analysis does not always produce unequivocal answers, other traditional antitrust objectives are often decisive. It seems more desirable to reinforce the claims for protecting the functioning of markets than arbitrarily to opt, as do Professors Bork and Bowman, for claims of efficiency (p. 461)." Policies aimed at the protection of markets might, for example, include protecting competitors, slowing merger trends, and/or deconcentrating already concentrated markets. Each of these types of policies are discussed in more detail below.

Protecting Competitors. According to Pitofsky (1979), Professor Bork (1965) has argued that, if political concerns are to be satisfied, there is no clear stopping point short of atomistic competition. This reflects the notion that antitrust laws might be used to protect competitors in the interest of the long-run health of the competitive

system. Pitofsky (1979) and Schwartz (1979) are two supporters of the Political Goals approach who suggest that antitrust might afford protection to small business. Schwartz is very adamant in calling for a rigorous application of the antitrust rules in order to insure a just system for small businesses. For example, Schwartz (1979) contends that: "A conspiracy to put a single small competitor out of business violates the Sherman Act even if there is no showing of significant impact of competition generally. In the Robinson-Patman Act, Congress explicitly extended the anti-discrimination ban to attempts to eliminate 'a competitor' as well as to cases of impairment of competition (p. 1079)." Santangelo (1983) would seem to agree with this assessment, contending that: "The subsequent passage of amendments and additions to the Sherman Act provides additional evidence that Congress intended the antitrust laws to assume a broad political and social function. Section 7 of the Clayton Act was revised 'to aid in preserving small business as an important competitive factor in the American economy' (p. 889)."

Pitofsky (1979) dutifully declares that the protection for small business owners against the rigors of competition plays no useful role in antitrust enforcement (see p. 1058). However, he seems to leave the door open to this type of protection in asserting: "There is no record that any legislator has suggested that a merger be challenged solely or principally because of an adverse effect on small business, employment opportunities, equitable distribution of wealth, or long-term threats to the stability of the country's democratic process. The question remains, however, whether such factors can be taken into account at all

in deciding at what level of draw the line describing unacceptable reductions in competition (p. 1061)."

Slowing Merger Trends. Most of the proponents of the Political Goals approach would agree with Pitofsky (1979) and Bok (1960) that the amended Section 7 of the Clayton Act had, as its central feature, the intent of blocking the merger trend. According to Bok (1960), virtually all proponents of the bill who spoke asserted that the merger trend must be blocked because concentrated economic power would lead to increased government control; because freedom would corrode and totalitarianism prosper; and because absentee ownership by large corporations would diminish local initiative and civic responsibility.

Policies aimed at slowing or stopping the trend toward mergers and concentration include attacking monopolies in their "incipiency" and guarding against conditions which encourage concentration. For example, Pitofsky (1979), believes that, notwithstanding ". . . the difficulty of identifying precisely at what point concentration produces conditions that facilitate collusion (p. 1070)," it was Congress' intention to stop the trend toward concentration and that it believed the dynamic process had to be stopped early (in its incipiency), before it developed "irresistible political momentum." Consequently, merger rules with relatively low firm-concentration ratio thresholds would be a policy to help slow the momentum according to Pitofsky.

Schwartz (1979) argues that vigorous antitrust prosecution, with explicit attention to political goals, will help slow and/or stop the merger-concentration trend:

A proper deference to the non-economic goals of antitrust and to the uncertainties of many economic measurements would affect the way certain economic testimony is handled. For example, where there is an issue as to defendant's market share and, as usual conflicting market boundaries are supported by evidence, the tribunal might be guided by the rule that the narrowest reasonable geographic and product boundaries would be accepted. Similarly, when 'effect on competition' is the criterion of legality, an adverse effect in one market should suffice to condemn the transaction without exploring the possible pro-competitive impact in another market . . . . [further] A proper deference to the non-economic goals of antitrust and to the unreliability of official discrimination between 'good' and 'bad' performance by enterprises would lead to a greater receptivity to per se and other prophylactic antitrust rules (pp. 1080-81).

Therefore, Schwartz and Pitofsky and other Political Goals supporters would be likely to favor policies in which very strict guidelines and rules are developed and implemented, there is a vigorous enforcement process, and the courts arrive at decisions using the narrowest possible interpretation of the guidelines. All of this, of course, would be accomplished by individuals and agencies with a sympathetic understanding of the political and other non-economic goals of antitrust.

Deconcentrating Industries. Finally, most of the supporters of the "political goals" approach to antitrust would agree that less concentration in American business and industry is a desirable policy outcome. They would like, in the words of Elzinga (1977), to see an evolution toward a more "Jeffersonian business landscape." Posner (1980), commenting on this idea, sees a desire among many in Congress to develop legislation against conglomerate mergers: "Legislation restricting conglomerate mergers often is justified as implementing the Jeffersonian ideal of a nation of small businesses (938)." This idea is frequently coupled, according to Posner, with a caution that ". . .

greater concentration will lead to greater governmental interference (p. 938)." This is not to suggest, however, that Posner supports a government breakup of conglomerate firms.

Shenefield (1979), as a way to ward off long-term government interference in the economic system, prescribes a (short-term) dose of interference in mergers to slow the process. Others would go further suggesting that currently concentrated industries be broken up without regard to economic efficiency. Swartz (1979) contends that several issues need to be resolved in favor of the proponents of the Political Goals approach, if the amassing of conglomerate power is to be halted and the danger of government interference minimized. Specifically, Swartz suggests that:

Recognition of the non-economic goals of antitrust warrants, a pro-antitrust resolution of controversies over the bane or benefit of vertical and conglomerate mergers, the desirability of a 'shared monopoly' approach to oligopoly, and the desirability of breaking up persistent monopolies even if no 'predatory' actions can be proved (p. 1081)."

These ideas, although somewhat radical, seem to have widespread support among supporters of the Political Goals approach to antitrust (see for example Weisskopf, 1971; Pitofsky, 1979; Sullivan, 1977; Blake, Pitofsky, and Goldschmid, 1975).

This concludes the review of the historical development of antitrust and of the viewpoints of the various proponent groups regarding the future direction of antitrust. It should be recognized that the debate concerning the proper interpretation and implementation of the body of antitrust law has continued for almost 100 years (since the 1890 passage of the Sherman Act) and is likely to continue into the foreseeable future, without a clear winner. Sullivan (1975) seems to

capture this idea quite well: "During the eighty-odd years that antitrust has been with us, there have been ebbs and flows of interest in enforcement, all correlated with other developments in national life (p. 12). As events, particularly those relating to the American and world economies unfold, the debate and interest in antitrust is likely to continue its ebbs and flows.

## CHAPTER III

### METHODOLOGY

The methodological approach used for this study is one that has been successfully applied in other social sciences, but has not been used in the legal and economic fields before. Content analysis, as explained below, has a rich and varied history, although it is still a relatively new technique. With the advent of computers and scanners, its use is likely to expand greatly in the future. It seems to be a method that can be profitably applied to an analysis of antitrust material, as well. This study will, in part, help identify its usefulness.

#### Content Analysis Approach

A content analysis procedure is used to study the antitrust decisions handed down by the courts between 1940 and 1987. This procedure permits an intense analysis of the content of individual cases, at a variety of levels of analysis (e.g., words, phrases, paragraphs). Content analysis has proven to be a valuable research tool in many social science disciplines concerned with drawing valid inferences from the text of a message (i.e., documents, publications, and a wide variety of other types of written communications).

An alternative approach to analyzing the content of antitrust cases, and one that has been used frequently in the past, is to identify the "landmark" decisions for the purpose of examining the most salient points used to support a particular court decision. This method is



widely employed by researchers and writers in law, antitrust, and economics fields. There are several difficulties associated with this method. First, its aim is to study the development and application of specific aspects of the antitrust law, whereas the purpose of this study is to examine the application of economic concepts across a large number of cases. Second, in the "landmark case" approach there is no uniform sampling procedure in respect to how many cases will be studied and at what time intervals. Consequently, comparisons of groups of cases involving a number of common variables is not possible; nor is the application of most common statistical procedures feasible. There are a number of other problems with this "landmark" case approach for the type of study of antitrust cases proposed here. However, the critical point is that this study aims at analyzing court decisions in a manner different from what has been done in the past. A content analysis procedure is well suited for this task. There is no evidence that a content analysis procedure directed at measuring economic reasoning has been attempted on a large number of cases occurring over an extended period of time.

#### Content Analysis Defined

Several noted researchers and authors have developed definitions for content analysis that are strikingly similar. Krippendorff (1980) defines the approach in the following manner: "Content analysis is a research technique for making replicable and valid inferences from data to their context (p. 21)." Stone, et. al. (1966) describe it as ". . . any research technique for making inferences by systematically and objectively identifying specified characters within text (p. 5)." Weber

(1985) contends that: "Content analysis is a research methodology that utilizes a set of procedures to make valid inferences from text (p. 9)." He then goes on to specify the procedures that one follows to use the method. Each of the above definitions focuses on two aspects of content analysis: 1) the analysis is performed on some form of text; and 2) the object of the method is the making of inferences.

#### Content Analysis Applications

As suggested earlier, the content analysis approach has been employed by social science researchers concerned with qualitative issues that are not easily measured. For example, Allied researchers in World War II using content analysis examined the text of German propaganda messages to make inferences about the mind set of Nazi leaders. In more recent times this method has been used extensively to study a wide variety of issues in numerous source texts to make inferences concerning the sender(s) of messages, the message itself, or the audience of a message (see Krippendorff, 1980 and Weber, 1985 for examples).

Weber (1985) and Krippendorff (1980) refer to Berelson (1952) in specifying a listing of potential uses for content analysis. Several of the items on Berelson's list are particularly relevant to this study. He suggests that content analysis might be used to:

- \*reflect cultural patterns of groups, institutions, or societies
- \*reveal the focus of individual, group, institutional, or societal attention
- \*describe trends in communication content

With slight modifications in terms (e.g., describe trends in the economic content of antitrust cases) each of these uses reflect, in part, the objectives of this study.

#### Uses and Kinds of Inferences

Krippendorf (1980) identifies six uses of content analysis techniques in respect to the forms of inferences content analysis may make. Three of these uses are of interest to this study--systems, indices, and institutional processes.

#### Systems

A system is a conceptual device to describe a portion of reality, according to Krippendorf (1980). Tenny (1912) was an early user of the systems approach. He asked:

. . . why should not society study its own methods of producing its various varieties of thinking by establishing . . . a careful system of bookkeeping? . . . What is needed . . . is the continuous analysis of a large number of journals . . . The records in themselves would constitute a series of observations of the 'social weather,' comparable in accuracy to the statistics of the United States Weather Bureau (pp. 895-898).

The inferences that are of greatest interest to content analysis, Krippendorf believes, stem from transformations that are " . . . invariant to a symbol system and extendable beyond time and space of available data (p. 20)." In this connection, three systems approaches that will be particularly useful for the purposes of weighing the study hypothesis are trends, patterns, and differences. Content analysis can extrapolate the trends from qualitative data (see for example, Speed 1893; Lasswell 1941; Loeventhal 1944; and Namenwirth 1973), can identify patterns that have a high degree of predictability (see for example,

Armstrong 1959; Sebeok and Orzack 1953; Labov 1972; and Garfield 1979), and can identify differences in ideological orientations (see for example, Klein and Maccoby 1954; Berkman 1963; and Gerbner 1964).

### Indices

Krippendorf (1980) defines an index as ". . . a variable whose significance in an investigation depends on the extent to which it can be regarded as a correlate of other phenomena [p. 40]." He reports three indices which have a long history of use, one of which is important for this study--the frequency index. This index measures the frequency with which a symbol, idea, or subject matter occurs in a stream of messages. The result tends to be interpreted as a measure of importance, attention, or emphasis. Again, according to Krippendorf, ". . . it is one thing to use frequencies or repetitions to gain certainty about a hypothesis, and quite a different matter to use it as an indicator of a phenomenon that is to correlate with it [p. 41]." It is this former use that is intended for this study.

### Institutional Processes

Lasswell (1960) identifies three principal societal functions of communication about which an institutional approach to content analysis may want to make inferences. These three functions include: 1) the surveillance of the environment; 2) the correlation of the parts of society in responding to the environment; and 3) the transmission of the social heritage from one generation to the next (culture).

Krippendorf (1980) suggests that communications in institutional contexts reflects the dominant power configurations of senders and

potential receivers. In this connection, the use of content analysis can lend insights and lead to inferences about the influence of particular groups and ideologies upon the economic and political/legal systems.

#### Research Design

The research for this study involves several elements of analysis. One element in the process requires a reading and analysis of each sample case opinion yielding an inventory and preliminary evaluation of the case. These elements include: the demographics of the case (time, court level, defendant, plaintiff, charges), a listing of cited individuals and cases, and an inventory of the kinds of economic evidence used in the interpretation of the case will be noted. The results of this process are recorded in a Case and Environmental Summary (see Appendix A).

A second element of the research is a computer-based content analysis of a sample of antitrust case opinions since 1940. The application of a computer program known as GENCORD yields a frequency count of specified words taken from a dictionary of terms and concepts. It also lists each identified economic word within its context so that the manner in which the word is being used can be evaluated. The aim of this procedure is to develop a census of the number and type of economic terms and concepts being applied to the decisions over time and across judicial levels. A summary of the results of the GENCORD analysis is also entered into the Case and Environmental Summary.

A third element of the research is a line by line analysis of the GENCORD output. That is, since a word can take on a variety of

meanings, it is necessary to determine the manner in which words from the economic dictionary are being used. For example, the word "demand" will be counted in the GENCORD analysis whether it is used as a common language noun (e.g., "He had a demand to put before the court.") or as a noun with an economic meaning (e.g., "Consumer demand is at an all time high."). In addition, some phrases or concepts may be double counted by GENCORD (e.g., the term "anticompetitive effect" would be counted twice, once for each word). There are a variety of other circumstances that require a line by line evaluation of the GENCORD output. The rules developed for counting each occurrence of an economic word or phrase are in Appendix B. After this evaluation is completed the results are then entered into the Case and Environmental Summary.

The results of the above elements, recorded on the Case and Environmental Summary forms, represent the data base for analysis in the study. The objective of the analysis is to examine relationships among the case and environmental variables in order to draw inferences about the relationships and to confirm or reject the hypotheses postulated on page 8.

#### Research Instruments

A variety of research instruments or aids are used to complete this research project. Some have already been mentioned in the proceeding section, but deserve further explanation. Specifically, the GENCORD computer analysis and the analysis of the Case and Environmental Summary forms are examined more fully below.

### GENCORD Analysis

The computer analysis of each case in the sample will aim at measuring economic word content. This procedure involves the use of three computer software elements. First, dictionaries of economic terms (three dictionaries) and terms describing other antitrust themes are needed. A second element of the software is the data base that contains the text of the decisions at the Federal court level since 1940. Finally, a program to match the word and theme lists against the data base is needed. Each of these elements are discussed in some detail in the following sections.

#### Dictionaries

The content dictionary forms the basis for content analysis. It includes a listing of words and phrases within a selected topical area that are then compared to the content of a written document (i.e., court opinion). A variety of outputs can be obtained from this process, one of which is the determination of which words and phrases are present in a document and the frequency with which they occur. Consequently, the quality of a content analysis relies heavily upon the quality of the underlying dictionary(ies) used.

Unfortunately, there are no preexisting, computer-based, economic content dictionaries available for use in this study. Therefore, the dictionary had to be created. Nine separate sources were used to develop four separate, topical dictionaries. These were then combined and edited to develop the Economic Analysis Dictionary used for this study (see Appendix C).

The sources for use were selected on the basis of: 1) the completeness of the glossary/index; 2) coverage of selected areas of economic study--i.e., general economics; microeconomics, industrial organization, and political/social economics; 3) dates of publication to avoid time boundness of dictionary--at least one publication from each decade of the study; and 4) usage levels--the leading texts in microeconomics and in industrial organization were selected. The four topical dictionaries include:

1. 1940's Based Economic Dictionary--Developed from selected terms and concepts in Horton's, Dictionary of Modern Economics, 1948.
2. Microeconomics Index Dictionary--Developed from a compilation of index and glossary terms from three microeconomics texts.
3. Industrial Organization Economics Dictionary--Developed from a compilation of index and glossary terms from three I-O texts.
4. Political-Social-Economics Dictionary--Developed from a compilation of index and glossary terms from two Policy, Public Welfare, Political Economy texts.

The combining and editing of these four dictionaries into one required three basic procedures. First, the combined dictionary was alphabetized and purged of all duplicate words. Second, all multiple word terms were reduced to a single unique economic word. Third, an extension operation to include different word endings was performed. This procedure added different tenses and singular/plural forms for each term in the dictionary.

#### Case Data Base

A second computer software element needed for the study is a data base of the court opinions between 1940-87. There are two data bases of



federal court case opinions currently available, LEXUS and WESTLAW. Through the generosity of a special research grant from West Law Company, St. Paul, MN, a sample of eighty-four cases was drawn from its computers to form a data base for this study. A listing of these cases is shown in Appendix D.

#### Content Analysis Program

The third and final element of the computer software requirements for this study is a content analysis program. This program compares each word in the economic dictionary (first element above) against each word in the court opinion data base (second element above) and provides an output of all resultant matches. This output takes the form of a "key word" (from the dictionary) in the center of a line of output (its context). The output also provides summary statistics, including the number of unique words from the dictionary used in a specific case, a listing of words by frequency of appearance in the case, total number of economic words in the case, and total of all words in the case. As alluded to earlier, the GENCORD Text Analysis Program is used for this purpose. The Text Analysis section of Academic Computing at the University of Minnesota, Minneapolis, has assisted in bringing these three elements together and in running the content analysis.

#### Summary Form Analysis

The items in the Case and Environmental Summary forms represent the various data bases that have been brought together for this study. Because of the diversity of variables included in the study and the nature of the hypotheses to be tested, three different statistical

methods are to be used, Pearson Correlation Coefficient, ANOVA, and multiple regression analysis. The correlation analysis is used to test the hypotheses dealing with the relationship between the level of economic analysis per case (number of economic words per 1000 case words) and the environmental and other case variables (hypotheses 4 on page 8). The ANOVA analysis is used to test the equality of the grouped means by time periods and by court level (hypotheses 1, 2, 3, 5 and 6). Finally, a stepwise multiple regression analysis is run to test the relationship between the level of economic analysis (dependent variable) and the environmental variables (independent variables). More is said about the study variables below.

#### Study Population

The population for this study includes all antitrust cases brought by the Justice Department and by private actions and which reached opinion between 1940 and 1987. The former year, 1940, was selected for three reasons. First, a forty-eight year period will yield adequate data to determine trends in the use of economic evidence and reasoning. Second, it is around this time that antitrust enforcement and proceedings entered a period of transition. According to Posner (1970), 1940 is a natural break point in the history of antitrust enforcement because in that year ". . . there was a sharp and permanent increase in the volume of Justice Department antitrust cases, and about the same time, too, the Supreme Court became markedly more friendly to antitrust enforcement (p. 367)."

Finally, 1940 was selected because it affords greater availability of data than earlier periods. Prior to that year, the data on private

actions to enforce antitrust laws is unavailable. Consequently, for the reasons cited, 1940 seems like a natural starting point to evaluate the data on antitrust. An earlier starting date would exclude a component of comparison data (private cases) and a later starting date might miss important information concerning antitrust trends.

Only those cases which have reached the opinion stage between 1940 and 1987 are in the study population. By definition, this must be true because it is the opinions that are the object of study and not the trials, arguments, or other case variables. However, it is noteworthy that most defendants in antitrust actions enter guilty or "nolo contendere" pleas. For example, between 1961 and 1976 there were 2,134 actions brought against defendants for antitrust violations. Of these 1609, seventy-five percent, resulted in guilty or "nolo contendere" pleas. Another 211 cases, 9.8 percent, were dismissed. Thus, only 315 cases, or 14.8 percent of the total cases filed, reached final judgement during this 15-year period.

#### Study Sample

From the population described above a stratified random sample of 84 cases has been selected. The determination of sample size for this study is predicated on three primary considerations. The first consideration concerns the type of statistical analysis intended for the data. A second consideration involves the proportions of each case to be included in the sample and the time increments selected for analysis. A final consideration reflects the nature of the instruments that will be used to conduct the research. Each of these is discussed in greater detail below.

### Type of Statistical Analysis

There are several different types of statistical analysis that are performed on the data. One of the primary types focuses on the comparison of case means across a range of variables. Of prime importance among these variables is the mean number of economic words per 1000 case words. A recommended sample size for the estimation of a population mean with a standard deviation of approximately 10.0 and a 95 percent confidence level that the sample mean is within +/- 2.0 of the true mean, is 96. Similarly, estimated standard deviations of 9.0, 8.0 and 7.0, with the same confidence level and error allowance, will yield sample sizes of 78, 61 and 47 cases respectively.

A sample size of 84 cases, selected for time and cost considerations (see discussion below), is likely to yeild statistically significant results based upon early estimated standard deviations of between 7.0 and 10.0 for sample means. Sensitivity analysis shows that a ninety percent confidence level would reduce all of the recommended sample sizes to less than 84 cases (e.g., for a standard deviation of 9.0 in the above situation, 54 cases would be recommended rather than 78 cases; for a standard deviation of 10.0 in the above situation, 67 cases rather than 96 cases would be recommended for the sample).

### Proportion of Cases in Sample

Given the proportion of cases desired for analysis at each judicial level (i.e., 33 percent) and given the time increments that are used to study the change in antitrust cases over time, a practical consideration of sample size concerns its divisibility. For ease in comparing results across time and court levels, it is desirable, at least initially, to

have equal number of cases compared for each of the four periods and to have an equal number of cases in each of the court level categories. A sample size of 84 cases can be readily divided into thirds (judicial level) and fourths (time periods).

#### Nature of Instruments

The nature of the instruments that are used in this study argue for a very careful consideration of the cost/benefits associated with the sample size for this study. Notwithstanding the fact that the use of computer analysis leads to some research efficiencies, it cannot be applied in all instances and, when it can be applied, computer analysis adds to downstream tasks. That is, in a number of instances the measurement of the variables of concern (e.g., citations) can only be arrived at through a line by line analysis of individual case opinions. Similarly, the computer output of those variables which do lend themselves to computer analysis require time intensive evaluation and interpretation. The same type of line by line analysis discussed above must also be used to evaluate each term's meaning in the context of usage.

Another consideration in the selection of sample size concerns the expense of creating the data base of case opinions. The grant from West Publishing was based upon a finite number of requested cases, eighty-four. A larger sample request would have risked the project because of the higher costs to West.

The considerations discussed above, therefore, argue for a sample size large enough to lead to generalizable results, yet small enough to afford sensitivity to time and money costs. Consequently, after a consideration of the cost and benefit tradeoffs of various sample

sizes, a sample of 84 cases is judged to be consistent with the goals of this study. This sample size meets the criteria concerning divisibility, mentioned above, and represents a major research undertaking, even with the use of a computer.

#### Sampling Procedure

A listing of all antitrust cases filed in the United States is published by Commerce Clearing House in Trade Regulator. From this listing a random sample of eighty-four cases was selected using the following criteria:

1. Cases must have reached decision between 1940 and 1987.
2. Only those cases for which opinions were written are included in the sample.
3. Case must have been adjudicated at the federal court level (district, appellate, and/or Supreme). Cases reaching opinion at the state court level are considered.
4. Only cases with opinions greater than four pages in length are included in the sample.

The rationale for the first three criteria is established by the manner in which this study has been defined (i.e., the study of opinions of federal courts between the specified years). The rationale for the fourth criterion is based on the nature of opinions that are written for antitrust cases. Opinions of less than four pages tend to involve rulings on legal procedure and very seldom do they represent rulings on antitrust matters. It is the antitrust opinions that are the main object of study here, not those dealing with legal issues or procedures. Hence, only those opinions of greater than four pages in length are included in the sample.

### Stratified Sample

The population of antitrust cases are divided along two dimensions. One dimension consists of the judicial system level of the proceedings and a second dimension represents the time frame of the case. Thus, there are 28 cases each for the Supreme, Appellate, and District court levels and there will be 21 cases selected for each of four equal time periods, 1940-1951, 1952-1963, 1964-1975, and 1976-1987.

The division of cases by level of judicial proceedings permits the testing of hypothesis number two on page 8. Similarly, hypothesis number one is tested by dividing the cases into four, twelve-year time increments. Because federal level judges are appointed for life, the judicial membership of courts remains relatively stable and, under normal circumstances, the approach that the justices take toward antitrust cases will also remain relatively stable. Justices are not likely to contradict their earlier rulings. Therefore, changes in the measurement of opinion variables ought to be evaluated at sufficiently lengthy time intervals so as to adequately represent new trends and approaches of new justices. Consequently, twelve-year periods, rather than some shorter time increment, is finite enough to capture any changes and to test the hypotheses on page 8.

### Sample Selection

The sample for the study, conforming to the parameters discussed above, is drawn using the following guidelines. First, using a random number table, a sample of twenty-one cases for each time period is selected from Commerce Clearing House's Trade Regulator. Each sample of twenty-one cases has seven Supreme Court opinions, seven Appellate Court

opinions, and seven District Court opinions. The sample space for this study is depicted in Table 3-1, below.

TABLE 3-1  
STUDY SAMPLE SPACE

Period	Supreme Court Cases	Appellate Court Cases	District Court Cases	TOTALS
1940-51	7	7	7	21
1952-63	7	7	7	21
1964-75	7	7	7	21
1976-87	7	7	7	21
TOTALS	28	28	28	84

As discussed earlier, this procedure yields a sample total of 84 cases for analysis. Also, each time period has an equal number of cases for analysis (21), as does each federal court level (28).

#### Variables To Be Investigated

The variables that are investigated in this study can generally be divided into three categories: 1) case characteristic variables, 2) environmental variables, and 3) economic variables. Table 3-2 shows these categories and the specific variables associated with each. A brief discussion of each category follows.

#### Case Characteristic Variables

It has been suggested by numerous individuals from widespread backgrounds (e.g., political, economic, historical, legal) that the



EXHIBIT 3-2  
STUDY VARIABLES

Case Characteristics:	<p>Form of Case            Civil v. Criminal                                  Plaintiff/Defendant Type                                  Level of Proceedings</p> <p>Case Demographics    Length of Decision                                  Number of Case Citations                                  Citation Index</p> <p>Judicial   Interpretation        Per Se/Rule of Reason                                  Conduct/Structure/Perf.                                  Decision Outcome</p>
Environmental:	<p>Legal, Political, Economic, Business</p> <p>Vigor of Enforcement Gross National Product Political Administration Merger Activity Business Failures</p>
Economic:	<p>Intensity                Word Frequency Analysis                                  Economic Word Index                                  Citations to Economists                                  Lawyer/Economist Cites                                  Number of Econ. Concepts</p> <p>Nature                    Type of Economic Arguments                                  Citation Source                                  Supply/Demand Factors                                  Economic Models                                  Micro Analysis</p>

approach to, and conduct of, antitrust cases has changed greatly over time. To determine the nature and extent of these changes, this first category of variables aims to develop a census of the characteristics of antitrust cases. This census is directed at enumerating and classifying cases in respect to the variables associated with the form of the case and the case demographics, and the manner in which judges have interpreted the case. These characteristics represent independent variables that are compared with the level and type of economic analysis, the dependent variable, to determine what, if any, relationships exist.

The "Form of Case" category includes several variables are be utilized to determine the existence of relationships between basic case typology and the level and/or type of economic analysis employed.

Each of these variables is described more fully below:

1. legal nature of case (civil vs. criminal)
2. plaintiff category (F.T.C., Justice Department, private)
3. level of proceedings (District, Appeals, Supreme Court)

More specifically, these variables are aimed at testing Study Hypotheses 2 and 3 on page 8.

The "Case Demographics" variables contain several important pieces of information that are used in developing other variables (e.g., Length of Decision is used to develop Economic Word Index) and/or in relaying basic longitudinal data about the antitrust cases themselves. For example, the "Number of Case Citations" and "Citation Index" variables will be evaluated to ascertain the presence or absence of long-term trends.

The "Judicial Interpretation" variables are analyzed and evaluated vis a vis their relationship with the level and kind of economic analysis used in cases and the value each variable takes on. For example, is there a relationship between the economic content of cases and the basis on which a violation is judged ("per se" versus "rule of reason").

#### Environmental Variables

It is postulated (see Study Hypothesis #4 on page 8) that the "climate of the times" in respect to economic, legal, and governmental characteristics and activities (independent variables) are likely to be related to the arguments (e.g., economic) and outcomes of antitrust cases. The five variables identified below serve to represent the environment in which antitrust actions are brought.

1. vigor of antitrust enforcement (number of antitrust cases instituted annually by the Department of Justice)
2. level of overall economic activity (GNP, GNP trend, rate of change, all in constant 1982 dollars)
3. political administration (Republican or Democrat)
4. level of merger activity
5. level of business bankruptcies (per 10,000 businesses)

These variables will also be used as the independent variables in a multiple regression analysis.

#### Economic Variables

The concept of "economic reasoning" is approached from four different perspectives, one related to the use of economic terminology

(i.e., word count), a second based upon the diversity of economic analysis included in each case, a third is geared to the use of economic models, theories, and concepts, and finally, a fourth is related to the economic and antitrust citations in a case. All of these approaches rely on the assumption that the usage level of economic terms, concepts, models, theories, and expert sources serve as an indicator of the level of economic reasoning used to judge an antitrust case. Each of the perspectives is briefly reviewed below. Table 3-3 serves as a reference for definitions of economic measures used throughout this study.

#### Economic Word Content Analysis

This approach to evaluating the economic content of antitrust cases utilizes a computer content analysis program. The GENCORD program results in a count and listing, within its context, of each economic dictionary word. Each economic word, is then evaluated by the researcher to determine whether the word is being used in an economic sense; if not, the word is not included in the count (see Counting Rules in Appendix B). The result of this analysis is a raw score count of the number of economic terms and concepts for each case (ECONWD).

In order to account for differences in case length, the raw score count obtained from the process described above is converted into a per 1,000 words rate (ECONWORD). This is accomplished by dividing the total number of words in the case by 1,000 and then dividing this result into the number of economic words in the case.

A preferred alternative to the line by line analysis of each word in context is to simply use the total number of economic words per case

TABLE 3-3

## DEFINITIONS OF ECONOMIC MEASURES

ECONWORD (economic words) ANALYSIS OF TERMINOLOGY CONTENT	
FORMULA: Total Economic Words (-) Total Words in Case/1000	DESCRIPTION: Number of economic words per 1000 case words; measures the intensity of economic analysis of a case. Total economic words in case is derived from word by word evaluation of GENCORD output.
ECONFACT (economic factors) ANALYSIS OF DIVERSITY OF EVIDENCE	
FORMULA: Total Supply and Demand Factors (+) Tot. Struct. Fact. (+) Tot. Conduct Fact. (+) Tot. Perform. Fact.	DESCRIPTION: Measures the breadth of analysis in respect to the number of factors examined from the industrial organization model of analysis.
ECONTHEO (economic theories) ANALYSIS OF CONCEPT/THEORY CONTENT	
FORMULA: Economic Models (+) Microeconomic Concepts	DESCRIPTION: Indicates the use of economic models and/or microeconomic concepts in the analysis of antitrust cases.
PTM (pure theory model) ANALYSIS OF CONCEPT/THEORY CONTENT	
FORMULA: ECONTHEO/3 (+) ECONCITE/21 (+) ECLITCIT/8	DESCRIPTION: Converts the raw totals of the included economic variables into proportionalized scores for the purpose of comparing the amount of economic theory (models and micro analysis) and citations to economics-only sources.
AEM (antitrust-economic model) ANALYSIS OF CONCEPT/THEORY CONTENT	
FORMULA: PTM (+) LAWECON/44 (+) ANTIJOUR/10	DESCRIPTION: Adds to the PTM (above) the proportionalized lawyer-economists and antitrust literature sources. Measures the level of use of anti-trust and economic theory.

(continued)

TABLE 3-3 (CONTINUED)

## DEFINITIONS OF ECONOMIC MEASURES

ECONCITE (economists citations)		ANALYSIS OF SOURCES
Total Case Citations of Economists	DESCRIPTION: Citations in the case opinion to economists in the economics and/or industrial organization discipline.	
ECLITCIT (economic literature citations)		ANALYSIS OF SOURCES
Total Case Citations of Economic Lit. Sources	DESCRIPTION: Sums the number of citations to articles in economic journals and/or textbooks.	
LAWECON (lawyer-economists)		ANALYSIS OF SOURCES
Total Case Citations of Antitrust Lawyer-Economists	DESCRIPTION: Counts the number of citations to antitrust lawyers espousing economic theories and antitrust policies.	
ANTI Jour (antitrust journals)		ANALYSIS OF SOURCES
Total Case Citations of Antitrust Literature Sources	DESCRIPTION: Yields the total number of case citations to antitrust topics from legal-economic-antitrust journals, casebooks and other literature sources.	
TECITES (total economic citations)		ANALYSIS OF SOURCES
FORMULA: ECONCITE (+) ECLITCIT	DESCRIPTION: Total of citations to economic literature sources and economists. Measures court's use of outside economic sources.	
TAECITES (total antitrust-economic citations)		ANALYSIS OF SOURCES
FORMULA: LAWECON (+) ANTI Jour	DESCRIPTION: Combines total citations in antitrust literature and lawyer-economist categories. Measures the impact of antitrust theory sources on court decisions.	

generated by GENCORD as the economic word (ECONWD) count. There are obvious advantages to using this process, because it greatly reduces the analysis time required to arrive at an economic word count for each of the cases. More will be said about this in Chapter 4.

### Economic Factor Analysis

The second perspective used to evaluate the level of "economic reasoning" is based on the breadth of economic analysis included in the opinion. That is, the number and type of economic factors used to analyze a case is reflective of the economic reasoning employed by the judiciary. This analysis is completed by the researcher reading every case opinion and indicating in the Case Opinion Summary (see Appendix A) the number of different types of economic factors used by the judges in evaluating the case.

There are four categories of economic factors used to evaluate the cases. With slight modification, the first four categories are based on the Bain-Scherer Model of Industrial Organization Analysis (see p. 23) and include: 1) Basic Conditions, 2) Market Structure, 3) Conduct, and 4) Performance. Additional variables, not part of the original model, were included in translating the model for research use (see p. 6-8 of Case Opinion Summary, Appendix A). The combining of these four categories results in a measure of the breadth of economic analysis titled "Economic Factor Analysis" (ECONFACT). Note that this measure does not result in a count of the number of times a factor appears in a case, but rather in the number of different factors used.

### Economic Theory Analysis

This perspective of the level of economic reasoning includes three measures, ECONTHEO, PTM and AEM. The first of these, ECONTHEO, measures the presence in a case of economic models and the use of microeconomic concepts (see pp. 8-9, Case Opinion Summary, Appendix A). The second measure, Pure Theory Model (PTM), aims to measure only the use of

traditional, (i.e., "pure") economic concepts. It combines the proportionalized scores of three Case Opinion Summary elements: 1) the Economic Theory analysis factor (ECONTHEO); 2) Citations to Economists (p. 2 of Summary, Appendix A); and 3. Citations to Economic Journals and/or Texts (p. 2, Summary, Appendix A). The scores for this measure are proportionalized in order to develop a common measurement base among several discrete variables with varying scales so that they might be combined into a single summary measure.

The third measure is less restrictive in respect to the "purity" of the sources included in that it incorporates not only economic sources, but also lawyer-economists (e.g., those who might teach economic approaches to law in law schools) and antitrust journals. These are not, strictly speaking, purely economic in their outlook, yet much of the discussion of economic theory associated with law comes from these sources. This less restrictive measure adds to the proportionalized scores discussed in the paragraph above. These two additional proportionalized scores from variables in the Case Opinion Summary: 1) Citations to Lawyer-Economists; and 2) Citations to Econ-Legal Antitrust Journals and Texts (p. 3, Summary).

The equations for determining the proportionalized scores for both measures are shown below and in summary Table 3-3. Note that the denominator of the divided scores is the maximum value of the variable in question (e.g., total number of response categories or largest number of cites in an individual case).



## 1. "Pure" Theory Model:

(Economic Models + Microeconomic Concepts)/3 - Economic  
Theory Analysis/3

(+) Cites to Economists/21

(+) Cites to Economic Journals and Texts/8

## 2. Antitrust-Economic Model:

Results of #1 above

(+) Cites to Lawyer-Economists/44

(+) Cites to Econ-Legal Antitrust Journals/10

The scores for each of these measures can then be compared across cases to evaluate differences, identify trends, and test hypotheses.

Economic/Antitrust Citations

Finally, a series of measures that evaluate the incidence of use of referenced economic and antitrust sources is used to help operationalize the concept of economic reasoning. The Economic/Antitrust Citations category includes the non-proportionalized totals of four of the measures discussed in the preceding section (i.e., ECONCITE, ECLITCIT, LAWECON, and ANTIJOUR) and two additional measurements, TECITES (Total Economic Citations) and TAECITES (Total Antitrust/Law-Economics Citations). These two measures are summary in nature, combining all citations to economists and economic journals/texts (i.e., ECONCITE + ECLITCIT) into the TECITES score and all law-economics/antitrust citations (i.e., LAWECON + ANTIJOUR) into the TAECITES score.

The TECITES and TAECITES measures differ from the Pure Theory Model (PTM) and the Antitrust-Economic Model (AEM) in several respects. First, they include only citations, whereas, the PTM and AEM also

include economic models and microeconomic concepts. The citations within a case have the potential for quickly differentiating each case from the others, and therefore, could prove to be a useful variable in this and later research. Second, the PTM and AEM models, because two of the variables were represented by categories (present/not present) while the other variables used in the summary measure were reported as a sum of observations, had to be proportionalized before comparisons could be made. The TECITES and TAECITES, on the other hand, are not proportionalized scores but rather simply the sum total of two underlying economic variables.

A final difference between these last two measures and the PTM and AEM measures is the fact that the TECITES and TAECITES scores are completely independent of one another. This is not true of the PTM and AEM scores in that the AEM measure is an addition to the PTM measure. Thus, because the TECITES and TEACITES are different in a number of ways, they have the potential for providing information not available through any of the other economic measurements.

#### Overlap in Measures

A caution must be given concerning the overlap in some of the economic measures developed above. Several of them contain variables that are also used in other measures. For example, ECONTHEO is one of the terms within the PTM measure and the TECITES/TAECITES have two variables in common with the PTM and AEM measures, respectively. The first two measures above, ECONWORD and ECONFACT, have no overlapping variables with any of the other measures.

Therefore, not all of these are independent measures and one might expect (e.g., where the overlap of variables is high) for there to be some overlap in the results of the application of these measures. Consequently, significant results from one measure may not constitute an independent substantiation of significant results of a second measure. It may simply be another way of measuring the same phenomena.

#### Composite Variables

As is evident from the discussion of the economic measures above, there are a variety of composite measures that have been developed for this study. The purpose of drawing together these composites is to give a single number that represents a central economic theme or thrust that might be present in the cases. The use of too many variables in the analysis will tend to overly segment the case data and could obscure the themes and patterns.

Beyond the composites identified by the formulas in Table 3-3, there are several subcomposite measures that are part of the ECONFACT (economic factors) measure and are identified below.

ECONFACT = BASICCON + STRUCSUM + CONDSUM + PERFSUM;

BASICCON = SUPFACTR + DEMFACTR;

SUPFACTR = RAWMAT + TECHSUP + UNION + WEIGHT + BUSATT +  
POLICIES + DURABLE + OTHER;

DEMFACTR = ELAST + SUBS + GROWTH + CYCLES + PURMETH + MKTG +  
GEOG + OTHER;

STRUCSUM = BUYSSELL + CONCEN + MKSH + DIFFER + BARRIERS +  
COSTSTRU + VERTINT + CONGLOM + OTHER;

CONDSUM = PRICING + STRATEGY + ADVERTISING + INNOVAT + INVEST  
+ LEGALTAC + CRIMEBEH + OTHER;

PERFSUM = EFFICEN + PROGR + TECHPER + EMPLOY + EQUITY + OTHER

The meaning of each of these variables can be determined by a quick reference to the Case Opinion Summary, Appendix A. The purpose here is to illustrate the complexity of some of the economic measures that are part of this analysis.

#### Validity/Reliability Issues

Validity, according to Krippendorff (1980), ". . . designates that quality of research results which leads one to accept them as indisputable facts. . . We speak of a measuring instrument as being valid if it measures what it is designed to measure, and we consider a content analysis valid to the extent its inferences are upheld in the face of independently obtained evidence (p. 155)." Several tools will be used to test the validity of the content analysis procedures:

1. test of dictionary against case content to determine comprehensiveness of coverage and identification ability
2. test of sampling through comparison with published case characteristics
3. test of inferences through correlation validity (e.g., comparison of two methods--citations vs. word frequencies)
4. test of inferences against external evidence (e.g., expert outsider analyses and evidence in the literature)

A second set of issues concerns the reliability of the measurements and instruments. Kaplan and Goldsen (1965) discuss the importance of reliability in the following manner: "The importance of reliability rests on the assurance it provides that data are obtained independent of the measuring event, instrument or person. Reliable data, by definition, are data that remain constant throughout variations in the measuring process [pp.83-84]." The careful specification of research design, research tools, and sampling methods as well as, the use of a

computer with a set of unchanging rules for analysis and a single researcher/analyst lend a degree of assurance to reliability.

Notwithstanding efforts to ensure validity and reliability of the analysis, there are certain to be difficulties in each of these areas. Dictionaries, target content, and some of the measuring tools are new. Mistakes are sure to be made. Krippendorff's (1980) comments are, therefore, of great relevance to this effort:

As is true for most research, content analyses are also rarely ever finished. Although a good content analysis will answer some question, it is also expected to pose new ones, leading to revisions of the procedures for future applications, stimulating new research into the bases for drawing inferences, not to mention suggesting new hypotheses about the phenomena of interest. the beginning and end of a content analysis mark but an arbitrary segment in time (p. 169).

In keeping with this view, the following chapter represents an initial effort at content analysis. It is a beginning, not an end.

## CHAPTER IV

### PRESENTATION AND DISCUSSION OF FINDINGS

The principal goal of this chapter is to review the research findings of this study in order to test the hypotheses postulated in Chapter 1. The chapter discussion is generally organized around the themes of the hypotheses and will follow the same order. Additional discussion relating to the variables in the study are also included, as appropriate.

#### Frequency Distribution of Economic Measures

This section reviews the frequency distributions of several of the economic measures discussed in the previous chapter. An examination of these data will permit an identification of any patterns and trends that may exist. For purposes of this review, the cases have been divided into four equal time periods, with an equal number in each period. The discussion of these distributions are organized around the four primary categories of measures used in Table 3-3.

#### Terminology Measure

The number of economic words per 1,000 case words (ECONWORD) is the basic measure in the study designed to test the level of economic content in antitrust cases. The frequency distribution of the ECONWORD measure is shown in Table 4-1. An examination of these data show no clearly discernable patterns, however. For example, the mean number of economic words for the first period (1940-51) is greater than that for the second period. Further, the means of the last two periods are nearly equal. Therefore, any expectations of a clear trend in the level

of economic content seem unsubstantiated when the results are examined from this perspective. Whether there are significant differences in means across the various time periods, and the meaning that might be attached to those differences, is the object of several of the hypotheses tests in the sections that follow.

TABLE 4-1

## FREQUENCY DISTRIBUTION OF ECONWORD MEASURE

Econ. Mea.	N Cat.	1940-51		1952-63		1964-75		1976-87		1940-87	
		N	%*	N	%*	N	%*	N	%*	N	%*
ECONWORD**	0	0	0	0	0	0	0	0	0	0	0
	1-5	4	19	9	43	3	14	0	0	16	19
	6-10	3	14	5	24	4	19	3	14	15	18
	11-15	6	29	1	5	4	19	9	43	20	24
	16-20	3	14	3	14	2	10	3	14	11	13
	21-25	2	10	2	10	4	19	3	14	11	13
	26-30	1	5	1	5	2	10	1	5	5	6
	31-35	2	10	0	0	0	0	1	5	3	4
	36-40	0	0	0	0	0	0	1	5	1	1
	41+	0	0	0	0	2	10	0	0	2	2
	Range	2.9-34.7		1.4-27.9		3.4-49.9		5.7-35.7		2.9-49.9	
	Mean	14.70		10.21		17.45		17.23		14.90	

\*Percentages in Table may not equal 100% because of rounding.

\*\*Economic Words per 1,000 Case Words

Diversity Measure

Table 4-2 shows the frequencies, percentages, ranges, and means for the ECONFACT variable. It is important to keep in mind that the ECONFACT measure does not count the number of separate occurrences of a factor such as "barriers to entry." Rather, it simply determines the presence or absence and the strength of an identified economic variable class in the case opinion. Therefore, one can get an idea as to the

diversity of arguments used in a particular case or type of case by examining this measure.

As with the ECONFACT measure above, a review of Table 4-2 does not reveal any discernable trends in the data. Noteworthy is the fact that the largest of the four means occurred during the first time period, and the second largest mean occurred in the 1976-87 time period.

TABLE 4-2

## FREQUENCY DISTRIBUTION OF ECONFACT MEASURE

Econ. Mea.	N Cat.	1940-51		1952-63		1964-75		1976-87		1940-87	
		N	%*	N	%*	N	%*	N	%*	N	%*
ECONFACT	0	0	0	0	0	0	0	0	0	0	0
	1-5	5	24	11	52	3	14	5	24	24	29
	6-10	11	52	5	24	14	67	9	43	39	46
	11-15	3	14	3	14	3	14	5	24	14	17
	16-20	1	5	2	10	1	5	1	5	5	6
	ovr 20	1	5	0	0	0	0	1	5	2	2
	Range		2-28		1-17		4-18		2-24		1-28
Mean		9.38		7.00		8.29		8.76		8.36	

\*Percentages in Table may not equal 100% because of rounding.

Concept-Theory Measures

The frequency data for the Concept-Theory measures is displayed in Table 4-3 and includes the ECONTHEO, PTM, and AEM models of analysis. Several patterns seem to emerge from the data in the Table. For example, there seems to be a steadily increasing use of the economic variables that enter into the ECONTHEO measure (i.e., economic models and microeconomic concepts). This is evidenced, first by the increasing value of the means from the first period through the last. Second, while only one of the 21 sample cases (approx. five percent) in the



1940-51 period made use of this type of variable, nearly 45 percent of the cases in the 1976-87 period made at least some use of these concepts.

TABLE 4-3

## FREQUENCY DISTRIBUTION OF CONCEPT-THEORY MEASURES

Econ. Meas.	N. Cat.	1940-51		1952-63		1964-75		1976-87	
		N	Pct*	N	Pct*	N	Pct*	N	Pct*
ECONTHEO	0	20	95	16	76	14	67	12	57
	1-5	1	5	2	10	5	24	7	33
	6-10	0	0	1	5	2	10	1	5
	11-15	0	0	0	0	0	0	1	5
Range		0-5		0-7		0-10		0-11	
Mean		.24		.71		1.29		1.43	
Pure Theory Model (PTM)	0	19	91	16	76	10	48	11	52
	.01-.99	1	5	2	10	8	38	7	33
	1.0-1.99	1	5	2	10	0	0	1	5
	2.0-2.99	0	0	1	5	0	0	1	5
	3.0-3.99	0	0	0	0	3	14	0	0
	4.0-4.36	0	0	0	0	0	0	1	5
Range		0-1.7		0-2.3		0-3.6		0-4.4	
Mean		.09		.31		.56		.54	
Antitrust-Economic Model (AEM)	0	15	71	12	57	6	29	3	14
	.01-.99	4	19	6	29	11	52	14	67
	1.0-1.99	2	10	1	5	1	5	2	10
	2.0-2.99	0	0	1	5	0	0	0	0
	3.0-3.99	0	0	1	5	1	5	1	5
	4.0-4.99	0	0	0	0	2	10	0	0
	5.0-5.99	0	0	0	0	0	0	0	0
	6.0-6.35	0	0	0	0	0	0	1	5
Range		0-1.7		0-3.4		0-4.9		0-6.3	
Mean		.15		.41		.81		.86	

\*Percentages in Table may not equal 100% because of rounding.

In respect to the variables in the Pure Theory Model (i.e., ECONTHEO, ECONCITE and ECLITCIT), only seven of the forty-two cases in the first two time periods under consideration included economic

theory concepts, while over half of the forty-two cases in the 1964-75 and 1976-87 periods included these concepts. Even more pronounced is the difference in the use of the variables that go into the Antitrust-Economic Model (PTM, LAWECON, and ANTIJOUR). Specifically, Table 4-3 shows that less than half of the cases in the first two time periods included this type of economic analysis, while for the latter two time periods, only six and three cases respectively, failed to include some use of these types of variables in analyzing the cases.

#### Sources Measure

Finally, the frequency distribution for the sources measures are reviewed and include the following: Cites to Economists (ECONCITE), Cites to Economic Journals and Texts (ECLITCITE), Cites to Lawyer-Economists (LAWECON), and Cites to Economic/Legal Antitrust Journals (ANTIJOUR). The TECITES and TAECITES are essentially a simple additive combination of the above measures, and therefore are not included.

There are a couple of striking features of the frequency data in Table 4-4. One of these is the relatively high mean for the citations to economists (ECONCITE) in the third period (1964-75). Another feature of the data in Table 4-4 is that the means of LAWECON (citations to lawyer-economists) exhibit the greatest difference between their highest and lowest values. Prior to 1963 far fewer than half the case opinions were subject to analysis by the economic variables contained in the LAWECON and ANTIJOUR measures, whereas after 1963, over half the cases now include this type of analysis.

TABLE 4-4

## FREQUENCY DATA ON ECONOMIC VARIABLES

Variables	N Cat.	1940-51		1952-63		1964-75		1976-87		1940-87	
		N	%*	N	%*	N	%*	N	%*	N	%*
ECONCITE	0	20	95	19	90	12	57	17	81	68	81
	1-5	1	5	1	5	8	38	4	19	14	17
	6-10	0	0	0	0	0	0	0	0	0	0
	11-15	0	0	1	5	0	0	0	0	1	1
	16-20	0	0	0	0	0	0	0	0	0	0
	ovr 20	0	0	0	0	1	5	0	0	1	1
	Range Mean	0-3 .14		0-11 .57		0-21 1.95		0-4 .43		0-21 .77	
ECLITCIT	0	21	100	20	95	17	81	18	86	76	91
	1-5	0	0	0	0	4	19	3	14	7	8
	6-10	0	0	1	5	0	0	0	0	1	1
	11-15	0	0	0	0	0	0	0	0	0	0
	16-20	0	0	0	0	0	0	0	0	0	0
	ovr 20	0	0	0	0	0	0	0	0	0	0
	Range Mean	0-0 .00		0-8 .38		0-3 .33		0-4 .33		0-8 .26	
LAWECON	0	16	76	14	67	10	48	3	14	43	51
	1-5	4	19	4	19	2	10	14	67	24	29
	6-10	1	5	1	5	4	19	2	10	8	10
	11-15	0	0	1	5	1	5	1	5	3	4
	16-20	0	0	0	0	4	19	0	0	4	5
	ovr 20	0	0	1	5	0	0	1	5	2	2
	Range Mean	0-7 .81		0-44 3.10		0-19 5.62		0-48 5.14		0-48 3.67	
ANTIJOUR	0	20	95	20	95	13	62	10	48	63	75
	1-5	1	5	1	5	6	29	8	33	16	19
	6-10	0	0	0	0	2	10	3	4	5	6
	11-15	0	0	0	0	0	0	0	0	0	0
	16-20	0	0	0	0	0	0	0	0	0	0
	ovr 20	0	0	0	0	0	0	0	0	0	0
	Range Mean	0-10 .48		0-5 .24		0-8 1.29		0-9 2.05		0-10 1.01	

\*Percentages in Table may not total 100% because of rounding.

### Structuring the Hypothesis

There are a variety of ways in which to structure and arrange the information for statistical analysis and testing purposes. For example, for the first hypothesis, the null hypothesis suggests there has been no change in the judiciary's use of economic reasoning. The study design is based upon four equal time periods with equal numbers of case observations within each period. Therefore, one way in which to test the hypothesis is to compare the means of the variable "economic words per 1000 case words" across the four equal time periods. This test would result in the following form:

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$$

The alternative hypothesis is that the means are not all equal, with the magnitude and direction of the differences between the means indicating an increase or decrease in the use of economic reasoning from one period to the next.

This test of the equality of means could, however, also take the form of a test of the means of two, three, or more than five, equal or unequal, time periods with equal or unequal numbers of cases. Taken together the tests of the equality of means could be stated in the following manner:

$$H_0: \mu_1 = \dots = \mu_n$$

The value of this capability to change the time increments under study is the added flexibility it provides to study relationships among the variables which may or may not lend themselves to some preconceived notion of time categories.

An additional aspect of the hypotheses that should be noted is that each of the hypotheses from page 8 of the study represents eleven separate tests. That is, the means of each of the economic measures developed for the study (eleven economic measures, see pp. 169-170) is tested in each of the five hypotheses. Hence, each hypotheses test might be represented in the following manner:

$$H_{n1\dots 11}: \mathcal{A}_1 - \mathcal{A}_n$$

Consequently, the results of the study will be reported in terms that specify how many and which of the eleven measures show significance for each of the five hypotheses.

#### Use of Economic Reasoning Over Time

Hypothesis One relates to the utilization by the judiciary of economic reasoning in evaluating antitrust cases.

$H_0$  - There has been no change in the use of economic reasoning to judge antitrust cases since 1940.

$H_a$  - There has been a change in the use of economic reasoning to judge antitrust case since 1940.

The discussion of the findings for this hypothesis are organized according to the various time formats used to divide the cases for comparison purposes.

#### Four Equal Time Periods

The first test of Hypothesis One utilized four equal time periods, with equal numbers of cases (21) in each period. The form of test for the null and alternate hypotheses are represented below.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 \quad (\text{Test 1})$$

$$H_a: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4$$

The Analysis of Variance (ANOVA) statistical procedure is used to test the equality of the multiple means. Significance at the .05 level is the criterion for acceptance or rejection of the null hypothesis. The probabilities were rounded down to the nearest two places.

As Table 4-5 shows, of the eleven economic measures used to evaluate the level of economic reasoning in the antitrust cases, two of the measures, ANTIJOUR and ECONWORD, showed significant differences

TABLE 4-5

## MEANS OF ECONOMIC MEASURES IN FOUR TIME PERIODS

Type of Econ. Analysis	Grand Mean	Time Periods				F Value	PR>F
		1940-51	1952-63	1964-75	1976-87		
		n=21	n=21	n=21	n=21		
ECONWORD	14.90	14.70	10.21	17.45	17.23	2.66*	.05
ECONFACT	8.36	9.38	7.00	8.29	8.76	.88	.45
ECONTHEO	.92	.24	.71	1.29	1.43	1.26	.29
PTM	.38	.09	.31	.56	.54	1.38	.25
AEM	.56	.15	.41	.81	.86	1.80	.15
ECONCITE	.77	.14	.57	1.95	.43	1.91	.13
ECLITCIT	.26	.00	.38	.33	.33	.56	.64
LAWECON	3.67	.81	3.10	5.14	5.62	1.59	.20
ANTIJOUR	1.01	.48	.24	1.29	2.05	2.89*	.04
TECITES	1.04	.14	.95	.76	2.29	1.38	.25
TAECITES	4.68	1.29	3.33	6.91	7.19	1.86	.14

\*Significant at .05 Level

between the means at the .05 level. Based upon this difference in means, the null hypothesis can be rejected for the means of these two measures and the alternate hypotheses accepted. The null hypotheses for the other nine measures cannot be rejected.

#### Two Equal Time Periods

A second test of the first hypothesis examines the equality of means between two time periods rather than four. For this test the years were divided equally into each sample group, resulting in an equal number of cases (42) for each. The hypotheses for the equality of means of the various economic measurements, therefore, is given the following form.

$$H_0: \mu_1 = \mu_2 \quad (\text{Test 2})$$

$$H_a: \mu_1 \neq \mu_2$$

The results of this test are shown in Table 4-6 and differ from the previous first test. That is, when the data are divided into two equal time periods, measured for economic content, and the means of the results of the analysis compared, there is a significant difference between the means of four of the economic measures. Thus, for the ECONWORD (significant at the .05 level), LAWECON (significant at the .05 level), ANTIJOUR (significant at the .01 level), Antitrust-Economic Model (significant at the .05 level), and the TAECITES (significant at the .05 level) measures, there is a difference between means.

Therefore, the null hypothesis can be rejected for five of the eleven measures and the alternate hypothesis accepted for these, i.e., there is a difference in five types of economic evidence when compared over two equal time periods. These findings point to a greater use of

economic reasoning and evidence in the post-1964 period than in the pre-1964 period. More specifically, there has been a significant increase in the economic word content of cases (ECONWORD), a greater reliance on antitrust and economic theory (AEM), and more use of "expert" sources in the antitrust field, including lawyer-economists (LAWECON, ANTIJOUR, and TAECITES). On the other hand, there does not

TABLE 4-6

## MEANS OF ECONOMIC MEASURES IN TWO TIME PERIODS

Type of Economic Analysis	Time Periods		F Value	PR>F
	1940-1963	1964-1987		
	n=42	n=42		
ECONWORD	12.45	17.34	5.58*	.02
ECONFACT	8.19	8.52	.10	.76
ECONTHEO	.47	1.36	3.32	.07
PTM	.20	.55	3.48	.07
AEM	.28	.84	4.98*	.03
ECONCITE	.36	1.19	2.01	.16
ECLITCIT	.19	.33	.37	.54
LAWECON	1.95	5.38	3.93*	.05
ANTIJOUR	.36	1.67	7.36**	.01
TECITES	.55	1.52	1.61	.21
TAECITES	2.31	7.05	5.18*	.02

\* Significant at the .05 Level

\*\*Significant at the .01 Level



appear to have been a significant difference in the use of "pure" economic sources (e.g., ECONCITE, ECLITCITE and TECITES) or in the number of different types of economic factors brought into consideration.

#### Economic Reasoning By Court Level

The second hypothesis of the study examines the relationship between the use of economic reasoning and the level of judicial proceedings. More specifically, the null hypothesis states: there is no difference between the means of economic variables for the three levels of federal judicial proceedings. The three levels referred to are the District, Appellate, and Supreme Court. The alternate hypothesis contends that there is a difference in the means of economic variables for the three judicial levels.

If there is no difference in the means, then it is likely that the types of economic evidence, tools, concepts, etc., as measured by the economic variables in the study, are fairly uniformly applied at each of the court levels. If there is a significant difference in one or more of the means measured across judicial levels, then it is likely that different court levels rely on differing kinds or amounts of economic evidence. The specific differences are identified in terms of the economic measurement variables previously discussed in this chapter. Table 4-7 shows the means of the economic measures at the three court levels, the F values, and the probability of achieving an F value as large or larger through chance alone.

Table 4-7 also shows that there is a significant difference between the means of eight of the eleven economic measures. Therefore,

for the eight measures, ECONWORD, PTM, AEM, ECONCITE, LAWECON, ANTIJOUR, TECITES and TAECITES, the null hypothesis of equality of means across the three court levels is rejected and the alternate hypothesis, that the means are unequal, is accepted. Simply rejecting the null hypothesis and accepting the alternate hypothesis does not explain, however, what specific kinds of differences exist between the courts in respect to their use of economic reasoning and evidence. In order to accomplish this task, post hoc or a posteriori tests can be applied to the data.

TABLE 4-7

## MEANS OF ECONOMIC MEASURES AT THREE COURT LEVELS

Type of Econ. Analysis	Court Levels			F Value	PR>F
	District	Appellate	Supreme		
	n=28	n=28	n=28		
ECONWORD	14.11	12.06	18.52	3.41*	.04
ECONFACT	9.18	7.04	8.86	1.56	.22
ECONTHEO	.54	.60	1.60	2.04	.14
PTM	.20	.23	.70	3.07*	.05
AEM	.24	.38	1.06	4.25*	.02
ECONCITE	.18	.36	1.79	3.10*	.05
ECLITCIT	.07	.07	.64	2.80	.07
LAWECON	.82	2.57	7.61	5.99**	.00
ANTIJOUR	.25	.89	1.89	3.90*	.02
TECITES	.25	.43	2.43	3.46*	.04
TAECITES	1.07	3.46	9.50	6.23**	.00

\*Significant at the .05 Level

\*\*Significant at the .01 Level

The most conservative of the post hoc tests, the Scheffe analysis, shows the following results at the .05 significance level: 1) regarding the use of citations to lawyer-economist antitrust sources (LAWECON), the Supreme and District courts are significantly different from one another but neither is significantly different from the Appellate court level; 2) the Supreme Court opinions rely to a greater extent on the use of citations to antitrust literature sources (ANTI Jour) than does the District Court; 3) there is a significant difference between the Supreme and District courts on the use of the economic variables in the AEM measure; 4) the Supreme Court's use of antitrust citations (TAECITES) is greater than the District Court's use; and 5) the use of economic words and concepts (ECONWORD) in Supreme Court case opinions is significantly greater than the Appellate courts' use of economic words and concepts.

#### Economic Reasoning By Plaintiff/Defendant

Hypothesis Three tests the relationship between the use of economic reasoning and the type of plaintiff in the antitrust case, i.e., government or private. This line of investigation can be extended to also include an inquiry into the relationship between the use of economic evidence and the defendant type. Thus, Hypothesis Three can be divided into parts A and B in the following manner:

Hypothesis 3A:

$H_0$  - There is no relationship between the use of economic reasoning and the type of claimant in the case.

$H_a$  - There is a relationship between the use of economic reasoning and the type of plaintiff in the case.

Hypothesis 3B:

$H_0$  - There is no relationship between the use of economic reasoning and the type of defendant in the case.

$H_a$  - There is a relationship between the use of economic reasoning and the type of defendant in the case.

As with the earlier hypotheses, the test of relationship will be determined with respect to equality of means of the economic measurements between the two types of claimants:

$$H_0: \mu_{1(\text{pri})} = \mu_{2(\text{gvt})} \quad (\text{Test 3})$$

$$H_a: \mu_{1(\text{pri})} \neq \mu_{2(\text{gvt})}$$

Table 4-8 depicts the plaintiff and defendant types for the cases in the study sample.

TABLE 4-8  
PLAINTIFF/DEFENDANT TYPES

	Private Cases	Government Cases
Plaintiff Type	57	27
Plaintiff Pct.	68%	32%
Defendant Type	71	13
Defendant Pct.	84.5%	15.5%

Because of the large number of private cases filed (i.e., private plaintiff), relative to the number of cases filed by the Department of Justice or other governmental units, there is, as might be expected, a difference between the number of private vs. government plaintiffs in

the sample. Further, because the government is more often the plaintiff, rather than the defendant, in antitrust cases, the difference in number of private vs. government cases is even greater at the defendant level.

Table 4-9 below shows the means of the eleven different economic measurements for the plaintiff and defendant by categories (private vs. government). In addition, for each of the economic measurements the F value and probability generated by the ANOVA analysis is shown.

TABLE 4-9

## RELATIONSHIP BETWEEN ECONOMIC REASONING AND PLAINTIFF/DEFENDANT

Economic Measure	Plaintiff				Defendant			
	Pri. Mean	Govt. Mean	F Value	PR>F	Pri. Mean	Govt. Mean	F Value	PR>F
	n=57	n=27			n=71	n=13		
ECONWORD	14.66	15.40	.10	.75	14.68	16.11	.24	.63
ECONFACT	7.97	9.19	1.13	.29	8.58	7.15	.92	.34
ECONTHEO	.79	1.19	.57	.45	.87	1.15	.17	.68
PTM	.30	.54	1.40	.24	.37	.42	.04	.84
AEM	.47	.76	1.11	.30	.55	.63	.05	.82
ECONCITE	.35	1.67	4.49*	.04	.84	.38	.31	.58
ECLITCIT	.14	.52	2.35	.13	.28	.15	.16	.69
LAWECON	3.05	4.96	1.03	.31	3.72	3.39	.02	.89
ANTIJOUR	1.00	1.04	.00	.95	.96	1.31	.25	.62
TECITES	.49	2.19	4.36*	.04	1.13	.54	.30	.59
TAECITES	4.05	6.00	.72	.40	4.69	4.67	.00	.99

\*Significant at the .05 Level

According to the content of Table 4-9 the null hypothesis, i.e., "there is no difference in the economic reasoning means of the different types of plaintiffs in the case," can be rejected for two of the eleven variables (ECONCITE and TECITES). This indicates that cases in which the government is involved as the plaintiff have higher levels of citations to economists than do cases with a private plaintiff. These differences in means are confirmed by the Scheffe post hoc analysis at the .05 significance level, as well. The null hypothesis cannot be rejected for the other nine measures of economic content, however.

In respect to Hypothesis 3B, i.e., "there is no relationship between economic reasoning and the defendant in the case," the null hypothesis cannot be rejected. None of the pairs of means between the defendant types seems even close to significance in respect to the hypothesis. However, the small number in respect to government defendants renders any conclusions as highly tentative.

#### Environment Effects on Economic Reasoning

The fourth hypothesis examines the relationship between the use of economic reasoning and the economic, legal, political, and business climates in the United States. There is, obviously, no single variable that can capture all of these environments, and it is quite unlikely that any of the environments can be assessed without the use of proxy variables. Consequently, five proxy variables representing the four environments (economic, legal, political, and business) are selected for analysis. The business environment is represented by two of the five proxy variables.

The proxy variables selected for use include: 1) the overall level of economic activity as measured by the gross national product (GNP) of the United States represents the economic environment; 2) the vigor of antitrust enforcement is measured by the number of antitrust cases instituted by the Department of Justice (DOJ) and serves as the proxy measure for the legal environment; 3) the political party (Party) which controls the administrative branch of the government (i.e., the presidency) is the measure for the political environment; and 4) the number of mergers/acquisitions, and 5) the number of business failures, represent the business environment.

#### Environmental Variables

Table 4-10 shows values of three of the variables (GNP, DOJ, and Party) for the years 1940-1987. The Gross National Product figures have been adjusted for the incidence of inflation/deflation by stating the figures in terms of constant 1982 dollars, as reported by The Department of Commerce, Bureau of Economic Analysis.

The number of cases initiated by the Department of Justice has varied a great deal over time, from 18 in 1953 to 105 in 1982. The DOJ data is gathered from two sources. The 1940-1969 data is taken from Posner's 1970 "A Statistical Study of Antitrust Enforcement." Using the counting method Posner outlined (p. 366), the total number of cases for the additional years in the table (1970-1987) are determined from reference to Commerce Clearing House's Trade Regulation Reporters.

It appears from the numbers in Table 4-10 that there is a rather striking increase in the number of cases initiated by the DOJ in 1980 and continuing through 1987. However, a close examination of the case

TABLE 4-10  
ENVIRONMENTAL VARIABLES 1940-87

Year	Constant Gross National Product (Bil. 1982 Dol.)	Number of Cases Initiated by Dept. of Justice	Political Party Controlling Presidency
1940	772.9	65	Democrat
1941	909.4	71	Democrat
1942	1,080.3	46	Democrat
1943	1,276.2	22	Democrat
1944	1,380.6	19	Democrat
1945	1,354.8	20	Democrat
1946	1,096.9	37	Democrat
1947	1,066.7	25	Democrat
1948	1,108.7	44	Democrat
1949	1,109.0	31	Democrat
1950	1,203.7	48	Democrat
1951	1,328.2	42	Democrat
1952	1,380.0	27	Democrat
1953	1,435.3	18	Republican
1954	1,416.2	24	Republican
1955	1,494.9	34	Republican
1956	1,525.6	30	Republican
1957	1,551.1	38	Republican
1958	1,539.2	47	Republican
1959	1,629.1	46	Republican
1960	1,665.3	35	Republican
1961	1,708.7	47	Democrat
1962	1,799.4	56	Democrat
1963	1,873.3	26	Democrat
1964	1,973.3	51	Democrat
1965	2,087.6	35	Democrat
1966	2,208.3	36	Democrat
1967	2,271.4	34	Democrat
1968	2,365.6	47	Democrat
1969	2,423.3	43	Republican
1970	2,416.2	51	Republican
1971	2,484.8	43	Republican
1972	2,608.5	68	Republican
1973	2,744.1	42	Republican
1974	2,729.3	36	Republican
1975	2,695.0	34	Republican
1976	2,826.7	41	Republican
1977	2,958.6	37	Democrat
1978	3,115.2	41	Democrat
1979	3,192.4	33	Democrat
1980	3,187.1	99	Democrat
1981	3,248.8	68	Republican
1982	3,166.0	101	Republican
1983	3,279.1	105	Republican
1984	3,501.4	93	Republican
1985	3,607.5	51	Republican
1986	3,713.3	54	Republican
1987	3,819.6	69	Republican



in those years indicates that many of these cases involved price fixing within a single industry--road construction and repair. This observation is substantiated by a recent report (Insight, June 15, 1987) indicating that: "From the beginning of 1979 through April this year, the department, under the Sherman Act, has brought 429 bid-rigging cases." The "department" above refers to the Department of Justice. It should also be noted that the lion's share of the 429 cases was related to road construction contracts.

#### Business Environment Variables

Table 4-11 shows the 1940-87 annual totals of the two environmental variables serving as proxies for the business environment. The merger/acquisition figures in the table reflect only those in manufacturing and mining concerns, rather than for all industries. This is necessary because data for other industries are unavailable for the earlier years in the study. In addition, the figures for 1980 and after in the Merger/Acquisition column in Table 4-11 are estimated because of changes in the manner in which the figures are reported. Similarly, the manner in calculating the Failure Rate per 10,000 business concerns changed after 1983.

One particularly noteworthy element of the data in Table 4-11, concerning mergers and acquisitions, is the pattern of data over time. That is, there appear to be two heavier periods of mergers and acquisitions; one period is from 1959 through 1973 and a second from approximately 1981-1987. However, according to Mergerstat Review, 1986, there were only ten \$100 million-plus deals in 1970, while there were

94, 113, 116, 138, 200, 270, and 346 \$100 million-plus deals from 1980 through 1986 respectively.

The data in Table 4-11 also indicates a distinct increase in mergers and acquisitions occurring around 1955, only five years after the passage of the Kefauver anti-merger law. Further, the table shows

TABLE 4-11

## BUSINESS ENVIRONMENT 1940-87

Year	Mergers/ Acquisitions	Failure Rate Per 10,000	Year	Mergers/ Acquisitions	Failure Rate Per 10,000**
1940	140	63	1964	854	53
1941	111	55	1965	1,008	53
1942	118	45	1966	995	52
1943	213	16	1967	1,496	49
1944	324	7	1968	2,407	39
1945	333	4	1969	2,307	37
1946	419	5	1970	1,351	44
1947	404	14	1971	1,011	42
1948	223	20	1972	911	38
1949	126	34	1973	874	36
1950	219	34	1974	602	38
1951	235	31	1975	439	43
1952	288	29	1976	559	35
1953	295	33	1977	590	28
1954	387	42	1978	610	24
1955	683	42	1979	519	28
1956	673	48	1980	831*	42
1957	585	52	1981	1,054*	61
1958	589	56	1982	1,032*	89
1959	835	52	1983	1,114*	110
1960	844	57	1984	1,119*	107
1961	954	64	1985	1,320*	115
1962	853	61	1986	1,468*	120
1963	861	56			

Sources: Federal Trade Commission; REPORT ON CORPORATE MERGERS AND ACQUISITIONS, 1955 AND CURRENT TRENDS IN MERGER ACTIVITY, 1969; ECONOMIC REPORT OF THE PRESIDENT, UNITED STATES GOVERNMENT PRINTING OFFICE, 1988.

\*Estimated Figures

\*\*Change in Calculation Procedure in 1984

that the failure rate for businesses increased substantially after 1980 to the highest levels of the periods under study (earlier periods, e.g., 133 in 1915 and 154 in 1932, had higher rates). Notwithstanding the change in calculation procedures in 1984, there is a clear indication of the increased failure rates up to that time.

#### Environment/Economic Reasoning Relationship

The fourth hypothesis of the study concerns the relationship between the level of economic reasoning in antitrust case opinions and the economic, legal, political, and business environments in which the case opinions were developed. More specifically, the null and alternate hypotheses state:

$H_0$  - There is no relationship between the use of economic reasoning and the economic, legal, political and business environments.

$H_a$  - There is a relationship between the use of economic reasoning and the economic, legal, political, and business environments.

Relationships in respect to this hypothesis are measured in two different ways to account for differences in the variables being measured. Correlation analysis (Pearson's Correlation Coefficients) is used to measure the relationship between the continuous proxy variables for the economic (GNP), legal (DOJ), and business environments. The primary concern here is to determine if and how the dependent variable (economic reasoning) changes in respect to changes in the independent variables.

The fourth environmental variable, political party in power, is a discrete, two response category, variable that does not lend itself to correlation analysis. Rather, an ANOVA procedure comparing the means of the economic variables in respect to each of the response categories is appropriate. If the means are equal (e.g., Test 3 above), it suggests that differences in political party have no relationship to the level of economic reasoning used in antitrust cases. If they are not equal, then it is likely that there is some relationship.

#### Correlation Analysis

Table 4-12 shows the correlation coefficients measuring the relationships among the economic, legal, and business environmental variables and the eleven economic measures. In addition, for each of the correlation coefficients, there is an associated probability score. This score represents the probability of obtaining a sample correlation coefficient as large as, or larger, than the one obtained, by chance alone. Thus, a standard .05 significance level would equate with a .05 probability score.

An examination of the probability figures in Table 4-12 indicates that one of the environmental variables, Mergers/Acquisitions, correlates with several of the economic measures at the .05 significance level. A second environmental variable, DOJ, correlates with one of the economic measures. However, significance does not imply strength or importance, but rather simply that the correlation coefficient is significantly different from zero. For example, the ANTIJOUR measures, citations to antitrust/legal/economic literature sources, correlates with the GNP at a .019 level. However, the size of the correlation

TABLE 4-12

## CORRELATION COEFFICIENTS OF SELECTED ENVIRONMENTAL VARIABLES

Economic Measure	Gross Natl. Product		Cases Init. By DOJ		Mergers/ Acquisitions		Business Failures	
	Corr.	Prob.	Corr.	Prob.	Corr.	Prob.	Corr.	Prob.
ECONWORD	.174	.113	.183	.095	.050	.654	.044	.693
ECONFACT	.032	.774	-.032	.775	-.013	.909	.070	.527
ECONTHEO	.159	.149	.001	.992	.221	.043*	.051	.642
PTM	.152	.166	-.036	.740	.225	.039*	.030	.788
AEM	.190	.083	-.031	.781	.245	.025*	.036	.745
ECONCITE	.055	.621	-.123	.266	.136	.218	-.041	.709
ECLITCIT	.057	.606	-.129	.243	.108	.329	-.053	.633
LAWECON	.171	.119	-.070	.526	.231	.035*	-.029	.793
ANTIJOUR	.256	.019*	.038	.731	.214	.051	.094	.394
TECITES	.059	.593	-.133	.229	.136	.216	-.048	.667
TAECITES	.201	.066	-.049	.659	.241	.027*	-.002	.987

\*Significant at the .05 Level

coefficient is a relatively low .256 (R) and the R-squared is only .066, indicating that approximately 6-7 percent of the variation in the dependent variable (ANTIJOUR) can be explained by the variation in the independent variable (GNP). The other statistically significant correlations are equally low.

These relatively low correlation coefficients also suggest that a multiple regression analysis, using the four variables in Table 4-12, will also yield a very low  $R^2$ . This is precisely the case, as is shown below.

Time Correlation

Before moving on to an analysis of the relationship of the political environment with the type and level of economic reasoning, a brief analysis of the impact of time on the economic measures is examined. Although, not strictly speaking, an environmental variable, a correlation analysis of time (year of case decision) was performed to determine to what extent it could help explain the variance in the economic measures. A reading of Table 4-13 shows that despite the fact

TABLE 4-13  
CORRELATION OF TIME WITH ECONOMIC MEASURES

Measure	Correlation (R)	R-SQUARED	Probability
ECONWORD	-.112	.013	.311
ECONFACT	.008	.000	.946
ECONTHEO	.176	.031	.110
PTM	.174	.030	.113
AEM	.209	.044	.056
ECONCITE	.079	.006	.476
ECLITCIT	.083	.007	.456
LAWECON	.194	.038	.076
ANTI Jour	.254*	.064	.020
TECITES	.085	.007	.441
TAECITES	.220*	.048	.044

\* SIGNIFICANT AT THE .05 LEVEL.

that significant correlations are achieved between time and two of the economic measures, the usefulness of the passage of time in explaining

the variability of the economic measures is minimal. That is, time explains only 6.4 percent of the total variability of the ANTIJOUR measure, and less than 5 percent of TAECITES. It would, therefore, by itself be a very poor predictor of the behavior of any of the economic measures.

ANOVA Analysis

Table 4-14 shows the results of the ANOVA analysis of the means of the proxy variable, "political party of the President" and each of the

TABLE 4-14  
RELATIONSHIP BETWEEN POLITICAL ENVIRONMENT  
AND ECONOMIC REASONING

Economic Measure	Democrat Mean	Republican Mean	F Value	PR>F
	n=46	n=38		
ECONWORD	15.35	14.35	.21	.64
ECONFACT	8.59	8.08	.22	.64
ECONTHEO	1.22	.55	1.84	.18
PTM	.51	.21	2.42	.12
AEM	.74	.34	2.50	.12
ECONCITE	1.09	.40	1.36	.25
ECLITCIT	.41	.08	2.07	.15
LAWECON	4.91	2.16	2.47	.12
ANTIJOUR	1.22	.76	.81	.37
TECITES	1.50	.47	1.76	.19
TAECITES	6.13	2.92	2.28	.14

economic measures. When comparing the means of each measure based upon the political party holding administrative power, none of the variables shows significance at the .05 level. That is, there does not seem to be a relationship between the political environment, as measured by this proxy, and the level of economic reasoning employed in antitrust cases.

#### Regression Analysis

Although individually there seems to be little relationship between the several independent environmental variables and the economic reasoning measures, there may be a combined relationship and/or a relationship based on the interactions of the variables. That is, a multiple regression analysis examines the combined ability of two or more independent variables to explain the variation in the dependent variable. Table 4-15 displays the results of the multiple, stepwise regression analysis of the dependent variables (economic measures) and the continuous independent environmental variables (i.e., all above except the political environment variable).

Adding the independent variables into each dependent variable model, in the order of best single regressor ("best" in yielding highest R-squared), second best, and so on, yields the "best" n-variable models displayed in Table 4-15. Independent variables continue to be added until some specified criterion is reached, e.g., .05 significance level. Thus, although the five "best" models (best one-variable model, best two-variable model) are shown below in the tables for each economic measure, only those achieving a .05 significance level pass the criterion.



As was true with the single variable correlation analysis, there are several regression models which meet the significance test. However, the predictive capability of the models ( $R^2$ ) is relatively low. At the .05 significance level, none of the multiple regression models in Table 4-15 exceeds an R-squared of 15 percent. Setting the inclusion level for the variables in the multiple regression at .10 rather than at .05 (not uncommon in multiple regression analysis) still does not increase the level of predictability of the models beyond the 15 percent level.

TABLE 4-15

REGRESSION MODELS FOR ECONOMIC MEASURES  
AND ENVIRONMENTAL VARIABLES

Regressed Measure	No. Var. in Model	R-Sq	Prob.	Var. in Model
ECONWORD	1	.034	.095	DOJ
	2	.045	.158	DOJ GNP
	3	.062	.156	DOJ FAILURES GNP
	4	.065	.248	YEAR DOJ MERGERS FAILURES
	5	.066	.369	YEAR DOJ MERGERS FAILURES GNP
ECONTHEO	1	.048	.043*	MERGERS
	2	.056	.096	MERGERS FAILURES
	3	.066	.140	YEAR MERGERS FAILURES
	4	.069	.222	YEAR MERGERS FAILURES GNP
	5	.073	.306	YEAR DOJ MERGERS FAILURES GNP
ECONFACT	1	.005	.649	DOJ
	2	.014	.768	DOJ FAILURES
	3	.015	.881	YEAR DOJ GNP
	4	.026	.712	YEAR DOJ FAILURES GNP
	5	.028	.817	YEAR DOJ MERGERS FAILURES GNP
ECONCITE	1	.018	.218	MERGERS
	2	.047	.141	DOJ MERGERS
	3	.053	.221	YEAR DOJ GNP
	4	.066	.244	YEAR DOJ MERGERS GNP
	5	.076	.277	YEAR DOJ MERGERS FAILURES GNP

\*Significant at the .05 Level

TABLE 4-15 (continued)

Regressed Measure	No. Var. in Model	R-Sq	Prob.	Var. in Model
ECLITCIT	1	.017	.243	DOJ
	2	.042	.176	YEAR DOJ
	3	.062	.162	YEAR DOJ GNP
	4	.069	.215	YEAR DOJ FAILURES GNP
	5	.077	.270	YEAR DOJ MERGERS FAILURES GNP
LAWECON	1	.053	.035*	MERGERS
	2	.089	.023*	MERGERS FAILURES
	3	.118	.017*	YEAR MERGERS FAILURES
	4	.131	.024*	YEAR DOJ MERGERS FAILURES
	5	.140	.034*	YEAR DOJ MERGERS FAILURES GNP
ANTIJOJR	1	.065	.019*	GNP
	2	.074	.044*	YEAR FAILURES
	3	.084	.069	MERGERS FAILURES GNP
	4	.086	.124	YEAR DOJ MERGERS FAILURES
	5	.087	.203	YEAR DOJ MERGERS FAILURES GNP
PTM	1	.051	.039*	MERGERS
	2	.064	.069	MERGERS FAILURES
	3	.075	.097	YEAR MERGERS FAILURES
	4	.083	.137	YEAR DOJ MERGERS FAILURES
	5	.092	.175	YEAR DOJ MERGERS FAILURES GNP
AEM	1	.060	.025*	MERGERS
	2	.075	.043*	MERGERS FAILURES
	3	.095	.045*	YEAR MERGERS FAILURES
	4	.104	.066	YEAR DOJ MERGERS FAILURES
	5	.110	.098	YEAR DOJ MERGERS FAILURES GNP
TECITES	1	.019	.216	MERGERS
	2	.051	.120	DOJ MERGERS
	3	.058	.187	YEAR DOJ GNP
	4	.074	.186	YEAR DOJ MERGERS GNP
	5	.087	.205	YEAR DOJ MERGERS FAILURES GNP
TAECITES	1	.058	.027*	MERGERS
	2	.087	.025*	YEAR FAILURES
	3	.119	.017*	YEAR MERGERS FAILURES
	4	.130	.025*	YEAR DOJ MERGERS FAILURES
	5	.135	.041*	YEAR DOJ MERGERS FAILURES GNP

\*Significant at the .05 Level.

### A Final Word

The overall results of the analysis of the relationships between the use of economic reasoning and the economic, legal, political, and business environmental variables show that there is some relationship present at the .05 significance level. Therefore, the null hypothesis is rejected and the alternate accepted. However, the relation between the environmental and economic variables is so weak as to be almost meaningless. This is evidenced by the very low level of correlation and R-squared statistics.

Some of the highest visibility proxies were singled out for this study. This is not to suggest, however, that there may not be other proxy variables for each of the environments that have the ability to better explain the variation in the economic measures than the ones selected. Unfortunately, present limitations in this study's scope prevent a further search for more appropriate proxies.

### Economic Reasoning by Judicial Interpretation

The fifth hypothesis explores the relationship between the judicial interpretations of cases and the use of economic reasoning in the opinion. Judicial interpretation is represented for the purposes of this study by two variables. The first identifies the manner in which justices categorize antitrust violations. Once a violation is placed into a category, a set of implicit rules for analyzing and interpreting the evidence guide the justices in reaching their decision. This variable is labeled "antitrust violations approach" and includes the following three categories: "per se," "rule of reason," and "other."

The second variable, "evidence focus" identifies the types of defendant/plaintiff behaviors and the nature of evidence used by justices to reach and support their opinions. It is based upon the Scherer/Bain industrial organization analysis model (see p. 23) and includes the following categories: "conduct," "structure," "performance," "combination," and "other."

The specific hypotheses that are being tested for acceptance or rejection are the following:

$H_0$  - There is no relationship between the judgement approach taken to antitrust cases and the use of economic reasoning.

$H_a$  - There is a relationship between the judgement approach taken to antitrust cases and the use of economic reasoning.

The test for relationship compares the means of the economic measures across the "type" category for each of the two variables. No significant differences in the means, when comparing the types of judgement approaches, implies no relationship, while a difference in means implies there is some relationship between the economic measures and the different types of approaches.

Tables 4-16 and 4-17 present the results of the ANOVA analysis of the two judgement variables. There appear to be no significant differences between the means of the categories for the "antitrust violations approach" variable shown in Table 4-16. The "other" category in the table reflects a mixed approach that some justices use to judge cases. That is, some justices will declare an act as a "per se" violation, while using a "rule of reason approach" to the evidence. Thus, the "other" category is most frequently a hybrid approach.

TABLE 4-16

## ANTITRUST VIOLATIONS JUDGMENT APPROACH

Economic Measure	Per Se Mean	Rule of Reason Mean	Other Mean	F Value	PR>F
	n=18	n=48	n=18		
ECONWORD	14.656	15.252	14.189	.08	.92
ECONFACT	6.556	9.417	7.333	2.83	.065
ECONTHEO	.222	1.188	.889	1.22	.30
PTM	.079	.470	.417	1.34	.27
AEM	.182	.678	.622	1.20	.31
ECONCITE	.111	.688	1.667	1.56	.22
ECLITCIT	.000	.333	.333	.69	.51
LAWECON	1.333	4.458	3.889	.99	.38
ANTIJOUR	.722	1.063	1.167	.19	.83
TECITES	.111	1.021	2.000	1.29	.28
TAECITES	2.056	5.521	5.056	.84	.44

A cautionary note to keep in mind when reviewing the results depicted in Table 4-16, is the relatively small number of cases in the "per se" and "other" categories. This is also a problem with some of the categories in the second judgement approach variable discussed below.

Table 4-17 shows the results of the comparison of the category means for the "evidence" variable. Although there are significant differences among the means of nine of the eleven economic measures of the variable, these results must be judged as inconclusive because of

the extremely small numbers in at least two of the categories. There are no observations at all for one of the categories, "Performance."

TABLE 4-17

## TYPE OF EVIDENCE USED TO EVALUATE CASES

Economic Measure	Conduct n=50	Struct. n=6	Combo. n=21	Other n=7	F Value	PR>F
ECONWORD	12.212	27.850	17.995	13.671	6.71***	.00
ECONFACT	6.840	10.667	11.762	7.000	6.69***	.00
ECONTHEO	.380	1.333	1.857	1.571	2.59	.06
PTM	.137	.996	.701	.569	3.64*	.02
AEM	.219	1.449	.988	.944	4.13**	.01
ECONCITE	.160	6.333	.714	.571	13.44***	.00
ECLITCIT	.020	2.000	.382	.143	7.86***	.00
LAWECON	1.340	13.333	5.524	6.429	5.75**	.00
ANTIJOUR	.520	1.500	1.619	2.286	2.15	.10
TECITES	.180	8.333	1.095	.714	13.92***	.00
TAECITES	1.860	14.833	7.143	8.714	5.03**	.00

\* - Significant at the .05 Level

\*\* - Significant at the .01 Level

\*\*\* - Significant at the .001 Level

The lack of observations in the "Performance" category does not imply that justices ignore this area of evidence. Rather, the explanation for its absence is accounted for by the categorization technique. That is, a case can fit into one and only one category of the evidence variable based upon the researcher's evaluation of which element of evidence was most prominent in the case opinion. Although evidence relating to the performance of a firm or industry is presented in many

cases, it is not the primary focus of evidence in any case, in the researcher's opinion. Hence, it does not appear in this table, although it is accounted for in other parts of the study (e.g., as part of a summary variable).

A second problem with the data in Table 4-17 is associated with the "combination" category. Since this is not a distinct category, independent of the others, but rather one that includes elements of two or more of the three primary categories (conduct, structure, performance), its presence introduces a confounding element to the results.

To solve the two problems cited above (small numbers in some categories and interdependence between the categories) the data in Table 4-17 was restructured. First, the "combination" category was deleted from the analysis, resulting in the removal of twenty-one cases. Second, two of the remaining three categories (i.e., structure and other) were collapsed into a single category labeled "other" with thirteen cases. This restructuring is shown in Table 4-18 below. Although ideally one would like to see about an equal number of each type of case and numbers in excess of 30 observations, that is not possible in this instance. The expansion of the "other" category to thirteen cases does represent some improvement in the situation, however, and still permits the testing of the null hypothesis.

The results after the restructuring continue to show significant differences in the means between the types of evidence. In every instance, as was also true before the restructuring, the conduct category is ranked last when comparing the means of the economic measures. The ECONTHEO and ANTIJOUR measures which were close to

TABLE 4-18

## CONDUCT VS. OTHER TYPES OF EVIDENCE USED TO EVALUATE CASES

Economic Measure	Conduct n=50	Other n=13	F VALUE	PR>F
ECONWORD	12.21	20.22	7.63**	.01
ECONFACT	6.84	8.69	2.09	.15
ECONTHEO	.38	1.46	4.41*	.04
PTM	.14	.77	9.16**	.00
AEM	.22	1.18	12.01***	.00
ECONCITE	.16	3.23	12.34***	.00
ECLITCIT	.02	1.00	9.60**	.00
LAWECON	1.34	9.62	18.92***	.00
ANTIJOIR	.52	1.92	5.81*	.02
TECITES	.18	4.23	13.21***	.00
TAECSITES	1.86	11.54	17.63***	.00

<sup>1</sup> "Other" category above includes "Structure" and "Other" categories from Table 4-17.

\* - significant at the .05 level

\*\* - significant at the .01 level

\*\*\* - significant at the .001 level

registering significant differences across evidence categories in Table 4-17, reach significance at the .05 level after the restructuring.

However, one measure that shows highly significant differences among the evidence categories before the restructuring, becomes non-significant.

Thus, ten of the economic measures show significant differences.

Until a larger sample of these types of cases are drawn and tested, the hypothesis cannot be rejected.



### Summary

This chapter summary is aimed, first, at addressing some of the issues raised earlier in the discussion of findings, and, second, to focus the research findings on the questions of the role of economic reasoning raised in the first chapter. The research findings are summarized in Table 4-19 for quick reference.

### Issues Raised in the Chapter

There are several specific issues raised in the discussion of the findings of the research that are examined briefly below. One of the issues is related to the use of GENWORD as a measure in place of ECONWORD and the other concerns the complexities of the study of antitrust.

### GENWORD vs. ECONWORD

An unresolved question that arose early in this findings chapter concerns the interchangeability of the GENWORD measure for the ECONWORD measure. If GENWORD could be used as a replacement for ECONWORD, the time and effort associated with content analysis procedures for antitrust cases could be reduced manyfold. GENWORD would not, for example, require a word-by-word, line-by-line analysis of the GENCORD output, as was the case for the ECONWORD measure.

Table 4-19 shows a comparison of the results of ECONWORD and GENCORD ANOVA analyses on three hypotheses. In the first test (equality of means over four time periods) neither measure detects a significant difference in means at the .05 level. However, ECONWORD is very close to the cutoff statistic, while GENWORD is not close. In the second

test (equality of means over two time periods) ECONWORD results in a rejection of the null hypothesis whereas GENWORD does not. Finally, in the third test (equality of means among different court levels) use of the ECONWORD measure results in a significance difference at the .05 level and rejection of the hypothesis, while GENWORD only comes close to the cutoff statistic. These comparisons indicate, therefore, that the ECONWORD AND GENWORD measures do not result in the same outcomes and, therefore, are not interchangeable.

TABLE 4-19

## COMPARISON OF ECONWORD AND GENWORD RESULTS ON SELECTED HYPOTHESES

Hypothesis Test	ECONWORD		GENWORD	
	F Value	PR>F	F Value	PR>F
Four Time Periods	2.66	.05	.16	1.76
Two Time Periods	5.58	.02*	3.49	.07
Court Level	3.41	.04*	5.16	.01**

\*Significant at the .05 Level

\*\*Significant at the .01 Level

This is not to say that a more judicious editing of the dictionary that gave rise to the GENWORD analysis could not be adjusted to attain a better correspondence between the two measures. That task, however, goes beyond the scope of this study.

#### Complexity Issues

As is suggested earlier and is apparent from the general nature of this study, the concept of economic reasoning and the manner in which it is applied to antitrust issues is somewhat complex. There are

multiple environmental variables, multiple case variables, multiple defendant, plaintiff, and court variables, and so on. Because of the complexity of the whole antitrust area, there is a real danger of making the study of economics in antitrust unwieldy and consequently more difficult to accomplish.

A study in the antitrust field, therefore, often necessitates an over simplification of relationships. This specific study is no exception. Some variables should have been included, but were not, and some were included that should have been left out. The same is also true of the hypotheses tested. It is likely that this research will raise far more questions than it answers. These are, of course, the basic research issues confronting all types of studies. Consequently, because of the complex nature of the antitrust-law-economics relationships, the conclusions arrived at in this study must be considered as tentative.

#### Hypotheses Summary

A summary of the hypotheses tests is shown in Table 4-20. Each hypothesis discussion specifies which of the economic measures show significance in the particular test. Additional comments related to these findings are made in Chapter 5.

TABLE 4-20  
HYPOTHESES SUMMARY

---

HYPOTHESIS ONE	There has been no change in the judiciary's use of economic reasoning to judge antitrust cases since 1940.
Results	<ol style="list-style-type: none"> <li>1. Four Time Periods: Two economic measures, ANTIJOUR and ECONWORD, showed a significant difference (.05) among the means for four equal time periods.</li> <li>2. Two Time Periods: Five economic measures, ECONWORD, AEM, LAWECON, ANTIJOUR, and TAECITES show significant (.05) differences between the means.</li> </ol>
Conclusion	<u>Two of eleven economic measures over four time periods and five of eleven economic measures over two time periods show significant differences in the use of economic evidence by the judiciary.</u>
-----	
HYPOTHESIS TWO	There is no difference in the use of economic reasoning among the three federal court levels.
Results	Eight economic measures, ECONWORD, PTM, AEM, ECONCITE, LAWECON, ANTIJOUR, TECITES, AND TAECITES show significant differences in means among the three court levels.
Conclusion	<u>Eight of eleven economic measures indicate a significant difference in the use of economic reasoning among the three federal court levels.</u>

---

TABLE 4-20 (CONTINUED)

---

**HYPOTHESIS THREE-A** There is no relationship between the use of economic reasoning and the type of plaintiff in the case.

**Results** Two of the economic measures, ECONCITE, and TECITES have significant differences at the .05 level in those cases in which the government is the plaintiff vs. those cases having a private plaintiff.

**Conclusion** Two of eleven economic measures show a relationship between the use of economic reasoning and the type of plaintiff in the case. In cases in which the government is the plaintiff, there tends to be greater use of citations to economists and the total number of economic citations (to economists and to economic literature) also tends to be greater.

-----

**HYPOTHESIS THREE-B** There is no relationship between the use of economic reasoning and the type of defendant in the case.

**Results** There were no significant differences between the means of the economic measures when evaluated by defendant type. However, results based on small n for government type defendants.

**Conclusion** There appears to be no relationship between the use of economic reasoning and the type of defendant in the case. Hypothesis needs further testing which includes more cases with the government in the defendant category.

---

TABLE 4-20 (CONTINUED)

---

HYPOTHESIS FOUR	There is no relationship between the use of economic reasoning and the economic, legal, political, and business environments.
Results	Two of the environmental variables, Gross National Product and Mergers/Acquisitions exhibited significant correlation with the ANTIJOUR and the ECONTHEO, LAWECON, PTM, AEM, AND TAECITES, respectively, at the .05 level. However the strength of the relationship is weak. The multiple regression analysis including models with the four environmental variables, as well as a fifth variable (time), showed very poor predictive capabilities for models using this particular set of proxy variables.
Conclusion	<u>There is a weak relationship between the use of economic reasoning and the economic and business environments.</u>
-----	
HYPOTHESIS FIVE	There is no relationship between the judgment approach taken to antitrust cases and the use of economic reasoning.
Results	No significant differences between the "per se" and "rule of reason" means for the eleven economic measures were found. However, there were significant differences when comparing the means of the second variable used to measure judgment approach, i.e., evidence used to evaluate cases. Ten of the eleven means resulting from the economic measurements were significant, but these results were weakened by small n's in some of the categories of the classification. A restructuring compares the conduct variable against the other types of evidence and results in ten of the eleven measures showing significant differences between the means. The "n" for the "other" category is still relatively small, however, and the results must be tempered accordingly.
Conclusion	<u>There appears to be a strong relationship between the judgment approach taken to antitrust cases and the use of economic reasoning.</u> Specifically, the use of economic reasoning seems to vary depending on the primary type of evidence used in a case. Additional testing needed.

---

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This is a study of the economic content of antitrust litigation at the Federal court level. A sample of 84 case opinions from the population of antitrust cases reaching opinion stage between 1940 and 1987 was selected. Computer assisted and manual content analysis procedures were used to analyze the cases and to develop a data base of economic content for the study. These data bases are used to test five hypotheses regarding the economic content of antitrust case opinions. The purpose of this study is to determine:

1. to what extent antitrust decisions are based on economic evidence or authority.
2. how the use of economic evidence has changed over time.
3. whether the type and amount of economic evidence changes among the Federal court levels.

A summary of the results of the hypotheses tests is shown in Table 5-1 on page 225 and the major findings relating to the questions above are reviewed in the following sections.

#### Major Findings of the Study

There are seven findings from the study that are discussed below. The first five findings result from the testing of the hypotheses of the study and the last two findings are the product of other elements of the research process.

TABLE 5-1

SUMMARY OF RESEARCH FINDINGS

Economic Reasoning Measure	Hypothesis #1 Time Periods 4 periods 2 periods	Hypothesis #2 Court Levels	Hypothesis #3 Plaint/Defend	Hypothesis #4 Environmental Var. GNP DOJ M/A BF	Hypothesis #5 Judge/Evid
<b>Terminology:</b>					
ECONMORD	*	*	NSD	NSR	NSD **
<b>Diversity:</b>					
ECONFACT	NSD	NSD	NSD	NSR	NSD
<b>Concept-Theory:</b>					
ECONTHEO	NSD	NSD	NSD	NSR	NSD *
PTH	NSD	*	NSD	NSR *-1	NSD **
MEM	NSD *	*	NSD	NSR *-1	NSD ***
<b>Sources:</b>					
ECONCITE	NSD	*	*	NSR	NSD ***
ECLITCIT	NSD	NSD	NSD	NSR	NSD **
LAMECON	NSD *	**	NSD	NSR	NSD ***
ANTIJOUR	*	*	NSD	NSR	NSD *
TECITES	NSD	*	*	NSR	NSD ***
TRACITES	NSD *	**	NSD	NSR *-1	NSD ***

NSD = NO SIGNIFICANT DIFFERENCE  
NSR = NO SIGNIFICANT CORRELATION

\* = SIGNIFICANT AT THE .05 LEVEL  
\*\* = SIGNIFICANT AT THE .01 LEVEL  
\*\*\* = SIGNIFICANT AT THE .001 LEVEL  
\*-1 = SIGNIFICANT, BUT NOT IMPORTANT



### Hypotheses Tests Results

The study tested five hypothesis (see p. 8) related to the economic content of antitrust case opinions. The results of these tests are one element of the major findings of the study and are briefly specified below.

#### Changes in Economic Content

The first major finding of the study is that there is some evidence supporting the notion that the amount of economic content used in antitrust litigation has changed over time. That is, five of the eleven economic measures show a significant (.05 level) difference between the means of the measures when the cases are divided into two equal time periods.

The procedures for arriving at this result involve dividing the time frame for the study into equal halves, pre-1963 cases and post-1963 cases, with 42 cases falling into each period. An ANOVA statistical analysis is then used to test the hypothesis for differences between the means of the economic measures for both groups of cases. The following are the five economic measures which show significant differences over the two time periods: ECONWORD (economic words per 1000 case words), AEM (use of economic models, citations to antitrust lawyers/economists and antitrust literature), LAWECON (total case citations to antitrust lawyers/economists), ANTIJOUR (total case citations to antitrust journals and literature sources), and TAECITES (total citations to antitrust literature and lawyer/economists).

When examined over four equal time periods, with an equal number of cases in each period, two of the eleven measures show significant

differences at the .05 level. That is, the ANOVA procedure shows that there are significant differences among the means of the ECONWORD measure and the ANTIJOUR measure when compared across the four groups of cases as well as over the two time periods. The differences among the means over the four time periods are indicated by Duncan's Multiple Range Test. This test shows that the means of the measures for the first and second time periods (1940-1951 and 1952-63 respectively) are both significantly different from the fourth time period (1976-87).

#### Economic Content Across Court Levels

A second major finding of the study is that the amount of economic content varies among the different court levels. Eight of the eleven measures of economic content show significant (.05) differences in their means when the District, Appellate, and Supreme Court levels are compared. The eight measures showing the difference include: ECONWORD, PTM, AEM, ECONCITE, LAWECON, ANTIJOUR, TECITES, and TAECITES.

The nature of the differences of the measures among the court levels is identified by the post hoc Scheffe test. The Scheffe analysis of the difference between the means indicates that: 1) the Supreme Court uses significantly greater amounts of economic content related to the LAWECON measure than do the District courts; 2) the Supreme Court opinions rely to a greater extent on the use of citations to antitrust literature sources (ANTIJOUR) than do the District courts; 3) there is a significant difference between the Supreme and District courts on the use of the economic content in the AEM measure; 4) the Supreme Court's use of antitrust citations (TAECITES) is significantly greater than the

District courts' use; and 5) the Supreme Court uses significantly more economic words (ECONWORD) in its opinions than do the Appellate courts.

#### Economic Content by Plaintiff/Defendant

A third finding concerns the relationship between economic content and the plaintiff/defendant in the case. Specifically, the means of two of the economic measures (ECONCITE and TECITES) show significant differences between cases in which the government is the plaintiff in a case and those which have a private plaintiff. In other words, the means for the two economic measures are significantly higher in those cases in which the government is the plaintiff. The ECONCITE variable measures the total citations to economists in a case. TECITES measures the total citations to economists and to economic literature sources.

On the other hand, there does not appear to be a relationship between the level of economic content and the type of defendant (private vs. government). However, given the relatively small number of cases (13) in the sample in which the government is the defendant, this conclusion must be taken as tentative and additional testing is recommended.

#### Economic Content and Environmental Variables

A fourth finding addresses the relationship between the economic content of an antitrust case and the business and economic environments. The hypothesis which tests the relationship between the economic content of cases and five proxy environmental variables shows no significant results. This suggests one or both of two conclusions. The first conclusion is that the economic, legal, political and business

environments, in fact, have no effect on case opinions. The second conclusion is that the proxy variables selected for each of the environments may not be the best ones--i.e., other proxy variables for each of the environments might better test the relationships.

At this time it is more appropriate to accept the first conclusion above. Additional testing of proxy variables for each of the environments is needed to support or reject the second conclusion.

#### Economic Content and Judgment Approach

Two types of case variables are included in the concept of judgment approach. The first type of variable concerns whether the case is judged on a "per se" basis or alternatively on a "rule of reason" basis. After classifying cases as either "per se" or "rule of reason" and evaluating each category with the eleven economic measures, no significant differences between the two types of cases is found.

A second type of variable for evaluating the judgment approach uses conduct, structure, and performance as the primary categories. Evaluation of the case opinions divided on this basis indicates that ten of the eleven economic measures show significant differences between cases classified as conduct versus those classified as belonging to a combination category, "other." The combination category is needed because of the small number of cases in the non-conduct categories. The only measure not showing significant differences between the two types of cases is the ECONFACT (number of economic factors used to evaluate a case) measure. That is, cases which are evaluated primarily on the basis of a conduct judgment approach have significantly less economic

content (on ten of the eleven measures) than do cases that use other judgment approaches.

Notwithstanding the combining technique that is used in the test above, the numbers in the "other" category are still relatively small (n = 13). Consequently, this finding should be regarded as tentative and additional testing using a different sampling distribution of this variable should be completed

#### Research Process Results

There are two additional study results that are the product of the research process employed, rather than of hypotheses tests. One of these results concerns the unique research approach and tools used to evaluate the economic content of case opinions. The second of these results is a consequence of the evaluation of the study data in conjunction with information in the literature review. That is, an analysis of the data yields a tentative conclusion concerning the claims of preeminence by the "Chicago School" of antitrust.

#### Unique Research Approach

The research process that is used for this study represents an innovative approach to the study of antitrust in several respects. First, the research is unique in that it pulls together three fields of study, economics, business, and law, in a large scale study of antitrust proceedings. Although there are studies that might combine two or three of these areas (e.g., industry studies combining economics and business), there apparently been no attempts to combine all three using a large scale sample size.

A second unusual element of the study is the computer content analysis approach. Evaluation of antitrust cases is normally the result of reading one or several cases and, based on that review, drawing conclusions. The use of content analysis as a research procedure enables a different kind of evaluation of cases and, with some adjustment and refinement of the process and tools, could result in a more thorough and widespread evaluation of antitrust cases. That is, more cases could be evaluated for specific content elements and require much less time.

A third unique feature of this research effort has been the development of the dictionaries and the eleven economic measures used to evaluate each case in the sample. Both of these elements need additional revision and development before they can be used more widely. However, these adjustments (e.g., combining some of the variables into fewer than eleven measures; developing specialized dictionaries to identify different types of economic/legal content) appear to be fairly straight forward and relatively inexpensive in terms of additional resource requirements.

#### Evaluation of "Chicago School" Claims

Finally, a tentative finding requiring more research for confirmation, is that the "Chicago School" approach to antitrust is gaining some currency among justices. In 1979 Richard Posner of the University of Chicago Law School wrote an article in which he declared:

The basic tenet of the Chicago school, that problems of competition and monopoly should be analyzed using the tools of general economic theory rather than those of traditional industrial organization, has triumphed. The concepts and methods of traditional industrial organization are increasingly

discredited in economics as practiced in the leading universities and this change is beginning to be reflected in the application of economics to antitrust law (p. 934).

Just three years after Posner's speech, Bork made essentially the same claims, joining with Posner in extolling the virtues of the "Chicago" approach and claiming a final and irreversible intellectual victory.

The tools being used here, as they are currently constructed, cannot confirm or deny a "Chicago" victory, however, there are several interesting pieces of evidence from the study that ought to offer encouragement to "Chicago" school supporters. For example, there is a greater use of microeconomic models in the last two time periods (29 percent and 24 percent of the cases in the 1976-86 and 1964-75 time periods respectively versus less than five percent of the cases for the pre-1963 period). Focusing on the cases in the data base since 1964, when the "Chicago" school made its presence felt, nearly 20 percent of the cases included some mention of the concept of elasticity. In addition, justices turned to lawyer-economists and antitrust journals in over half the cases, as sources of expert theory. However, a contrary sign is the fact that cases with citations to economists were actually higher in the third time period than in the fourth.

In summary, it seems clear that the economic measures developed for this study have picked up some of the differences in the economic content of case opinions, but more research needs to be done with these tools and this type of analysis before definitive statements can be made. A recommendation concerning this type of future research is made in a later section.

### Discussion of Findings

The possible and/or probable reasons for the findings described above are the focus of this section. Each of the findings is discussed in the same order as in the previous section.

#### Changes in Economic Content

There are fairly widespread expectations that antitrust cases are decided primarily on the basis of economic evidence. However, this is not necessarily true in all cases, nor at all times, as the results of this study illustrate. Despite the fact, many would argue, that the very nature of antitrust proceedings are economic and, therefore, the opinions ruling on antitrust issues must also be economic, there are other bases for evaluating antitrust. For example, cases might be decided on the basis of law and legal precedent (not necessarily the product of economic thinking), on the basis of political criteria, and/or on the basis of social criteria, to name a few of the most prominent alternatives to economic reasoning.

Further, it might be inferred that, to the extent that justices rely on case precedents, rather than examining each case in light of economic evidence and using economic tools available for analyzing the facts of the case, there is likely to be a lower level of economic content. Warren (1975), recognizes this relationship:

Most economists would argue that the competitive and anticompetitive effects of each specific practice should be analyzed with the objective of determining whether its net effect harms competition or promotes it. On the other hand, lawyers frequently use legal precedent to decide a case even when the legal precedent is not helpful in finding the correct issues of fact. . . . The economists criticize the use of precedent



because the facts in any two cases rarely coincide. Consequently, an appropriate decision in one case is not necessarily appropriate in another. Only a thorough economic analysis of each case will insure justice (pp. 73-74).

Consequently, the amount of economic evidence used in antitrust litigation might vary greatly from one case to the next, from one justice to the next, and from one time period to another.

Several factors support the expectation that the level of economic evidence used in cases should increase over time. One of these factors is the improvement in the tools of economic analysis. Economists argue that their models, theories, and tools of analysis have constantly improved since the early 1950s and that their insights into the competitive process have likewise shown improvement. Given the use of "expert" economic testimony in antitrust cases, these improvements are likely to show up in the opinions of the antitrust cases over time.

A second factor that leads one to expect higher levels of economic evidence in antitrust cases over time relates to the landmark decisions that have been handed down in recent years. For example, Mueller (an I.O. theorist), in 1964 declared: "Indeed it has recently been suggested that the Court's current antitrust decisions, particularly its merger opinions from 1962 onward, reflect a more studied adherence to that theory [conduct-structure-performance paradigm] 'than to precedent itself'. . ." The landmark Brown Shoe case, in which there was a heavy use of the type of economic evidence referred to by Mueller, was decided in 1961 and seems to have ushered in the new economics era in antitrust.

Another factor that might lead one to expect a higher level of economic content in antitrust cases is the greater knowledge of economic theory by those involved in antitrust proceedings. That is, Schmalensee

(1972) indicates that ". . . economic theory is becoming better understood by enforcement agency personnel, who are applying it with increasing frequency . . . (p. 996)." In addition, many of the most popular law books used for antitrust education (e.g., Posner and Easterbrook, 1984; Areeda and Turner, 1976) are heavily influenced by, and include fairly large doses of, economic theory and concepts. This was not generally the case for earlier lawbooks dealing with antitrust. Finally, a review of selected law journals (e.g. University of Pennsylvania Law Review, Harvard Law Review, and University of Chicago Law Review) controlled and read largely by lawyers, shows what seems to be an increasing number of antitrust articles employing economic analysis and economic theory. Thus, current lawyers and students of law, as well as sitting judges and future judges, appear to have exposure to a higher level of antitrust economics than was true in earlier periods. Many of these journal and lawbook sources are showing up as citations in antitrust cases, which again supports the observation that the economic content of cases is increasing.

#### Economic Content Across Court Levels

A second major finding is that the level of economic evidence varies by court level. The reliance on expert outside economic sources, including references to microeconomic models and concepts, citations to antitrust lawyers and economists, citations to antitrust law and economic journals show significant differences between the Supreme Court and the other two court levels. The Supreme Court was the heaviest user of the six economic measures that were shown to be significantly different across the three court levels.

At this point there is no definitive answer as to why the Supreme Court is the heaviest user of economic evidence. One might speculate as to possible sources of this variation, however. Three potential sources for the differences are the precedent setting nature of the cases, the benefit of lower court analysis, and greater exposure to "friends of the court" briefs. The District level and Appellate level courts are primarily charged with application of the law as interpreted by the Supreme Court in previous cases. The Supreme Court in rendering its decisions is likely to carefully develop the underlying rationale and philosophy so that judges at the lower levels can evaluate the applicability of the decision to their cases. To the extent that the rationale and philosophy are economic in nature, one would expect to find higher levels of economic content and reasoning at the Supreme Court level than at the lower court levels.

A second possible reason for the higher level of economic reasoning at the Supreme Court level is that the Supreme Court justices have the benefit of the opinions developed at the lower court levels. That is, when the Supreme Court hears the case, it has the benefit of the rationale developed by the lower courts. Thus, although the evidence is no more expansive between the time the case is argued at the District Court level and the time it reaches the Supreme Court level, the Justices at the Supreme Court level have the benefit of the thinking of the judges at the two lower levels through their opinions. This thinking might be further supplemented by rationale developed at the Supreme Court level and could lead to higher levels of economic content. On the other hand, when the Supreme Court overturns lower court

decisions and/or departs from precedent, explanations for selecting one particular way to view the evidence rather than another may be needed. In the process of rationalizing the two conflicting points of view might require a more expansive discussion of economic concepts and principles.

Finally, the Supreme Court might be the heaviest user of economic content because of its higher level of exposure to "friends of the court" briefs. Although these briefs may also be filed at the Appellate level, the Supreme Court is likely to have a heavier exposure to these filings. These briefs, representing proposals to the justices for interpreting a particular law, are especially prevalent when matters of public policy are involved. To the extent that these proposals concern economic theory and concepts and find their way into the interpretation of the law and into the subsequent case opinion, a case at the Supreme Court level would likely have a greater level of economic content for this reason. Given the highly technical nature of economic theory, one might suspect that this would be an area that justices would welcome "friends of the court" opinions.

Although all of the reasons cited above seem somewhat plausible, they are only some of the possible explanations for the higher level of economic content at the Supreme Court level. More study is needed to test these theories before any final conclusions can be drawn.

#### Economic Content by Plaintiff/Defendant Type

The heavier use of economic citations when the plaintiff in the case is the government is a somewhat limited finding. The two measures, ECONCITE and TECITES, have a common element in their structure and

consequently are interrelated measures. Further, the source of the economic citations (developed from the plaintiff's or defendant's evidence in the trial or from the judges own evaluation of the case) is not clear and additional research evidence would be needed to pin this down.

One might argue that the government (Department of Justice or Federal Trade Commission), with greater resources and/or greater economic background/knowledge, is more likely to use economic citations to prove its cases than are private plaintiffs. This evidence is then cited by the justices in their opinion for the case. Or one might also argue that, given the government's winning record in antitrust cases, its use of economic citations in the evidence is more likely to be picked up by the justices than when a private plaintiff uses similar types of economic citations. These are speculations that require further evidence before a conclusion concerning the reason for the differences in the level of economic citations between cases is determined.

#### Economic Content and Environmental Variables

The environmental variables seem to have very little effect on the level of economic evidence used in antitrust cases. At least three explanations might account for this finding. One of these is that there truly is no relationship between the environment, as measured by the proxy variables, and the economic content in antitrust cases. There is some support for this view in Posner's (1970) study of antitrust enforcement. Although he was investigating the linkages between enforcement and selected environmental variables and found little

relationship between the two, the lesson may be that antitrust is not closely related to the business, economic, and political, and legal environments. Thus, it seems more likely that it is the type of case and not the environment that is the most critical variable in explaining the level of economic content.

A second explanation, suggested earlier, is that the variables selected may not adequately measure the environments in question and, consequently, no relationship is observed. Finally, the reason that the environmental variables do not show a stronger relationship with the level of economic content may be related to time factors not explored in the research. For example, neither lagged nor leading correlations between the economic variables and the level of economic content in antitrust cases were investigated in this study. More sophisticated econometric models might suggest other relationships not yet discovered in the data.

#### Economic Content and Judgment Approach

The differences between the economic measures of cases using different judgment approaches, because of the relatively small number of cases in the categories, is tentative. Although there seems to be reason to expect that cases falling into the "conduct" category would have a lower level of economic content than other types of cases, the evidence in the study needs to be supplemented before that conclusion can be drawn. One might have an expectation of lower economic content in these cases because "conduct" cases, by definition, rely more heavily on observable behaviors (e.g., price fixing, tying contracts, and

foreclosure of market) and the focus tends to be on these behaviors rather than on the economic impacts of the behaviors.

The finding of significantly lower levels of economic content on ten of the eleven measures in "conduct" cases should be reevaluated using a larger sample of the cases in other categories. Specifically, more cases in the structure and performance categories are needed in the sample.

#### Research Approach

There are two elements of the research approach to the study that merit further discussion. The first is the combined economic dictionary that is used in the computer analysis of the case opinions. The dictionary seems to effectively identify the economic word content of the cases. That is, it measures significant differences in four of the eleven tests of hypotheses. However, the line by line analysis that resulted in the economic word count used to determine the ECONWORD measure is a time consuming and cumbersome process. More work is needed to reduce the time needed to arrive at the economic word count for the cases.

A second element of the research approach that merits attention are the eleven measures of economic content. The measures fall into the four broad categories of terminology, diversity, concept-theory, and cited sources. The single measure in the terminology category, ECONWORD, seems to do a good job in differentiating cases over time, at different court levels, and those using different judgement approaches. However, the ECONFACT measure of diversity does not differentiate cases

well and seems to need some adjustments before it can be considered a useful measure.

The remaining two categories of measures, content-theory and cited sources, both use multiple measures. The content-theory category uses three measures and the cited sources uses six measures. Although each of the measures differs in some respect, it would seem that at least some of these measures might be combined or deleted altogether. For example the TECITES and TAECITES measures are composite measures of four other measures. Analysis of each of the measures and how they behave in relation to the other measures might lead to identification of redundancy and a reduction in their number. The benefit would be fewer measures needed to arrive at the same level of information about the economic content in cases.

#### "Chicago School" Claims

The discussion of the final finding relates to claims of victory made by proponents of the "Chicago School" of antitrust and ties together statements in the literature with the content analysis of the cases. The "Chicago School" claims, however, were first preceded by Mueller's (1964) assertion that economics, specifically the industrial organization variety, had become the preeminent criterion for deciding antitrust (merger) cases. Subsequently, Posner (1979) and then Bork (1982) claimed that the "Chicago School" of antitrust had in the late 1970s and early 1980s attained ascendancy over the industrial organization approach to antitrust. Is there evidence in the study that either supports or refutes these statements?



Claim One: Economic Criterion

The first claim (Mueller's statement of the primacy of economics as a judgment criterion) does appear to have some support in the study. For example, if the contention is true, one piece of evidence that would lend support to the claim is a greater level of economic content in antitrust cases after 1964 than before 1964. This, in fact, seems to be what happened, as is evidenced by the significant increases in five of the economic measures between the pre-1964 and the post-1964 time periods. Economics is playing a larger role in antitrust cases, as the economic measures of this study show. Whether or not economic models of antitrust, either or the "Chicago" or "Harvard" variety, are the primary criteria in antitrust cases is not as certain.

Evidence from the study (e.g., the finding concerning less economic content in conduct cases) leads one to believe that, for some types of cases, economic models may not be the primary standard against which behavior is judged. However, for other types of cases (e.g., mergers), economic models may indeed be the predominant criterion, as is suggested by Mueller. Additional research into this question is required to determine the relative importance of economic evidence for different types of antitrust offenses.

Claim Two: "Chicago" Victory

The second claim concerns the primacy of the "Chicago School" over the "Harvard School" of antitrust. With these claims of victory for "Chicago" and the seeming concession of the field by many of the "Harvard" theorists, one might expect to see the full flower of the use of economic content in antitrust cases during the 1976-87 period.

Adding to that expectation is the concerted effort on the part of "Chicago" supporters to formally educate the Federal judiciary in the theories and methods of their craft. Estimates (see Anspach, 1984 and 1985; and Bickel, 1983) are that fully one half of the Federal judiciary has attended these seminars between 1980 and 1987.

Added to these influences is a presidential administration (Reagan, 1981-1989) intent on appointing conservative justices and an attitude in government during the past two Presidents' terms (Carter, 1976-1980; Reagan, 1981-1989) which supported deregulation of the economic environment. One expects, therefore, to see a fairly strong surge in "Chicago" economics showing up in antitrust opinions, especially in the last 12-year time period of this study.

If the "Chicago School" has achieved ascendancy, as its supporters contend, it seems reasonable to expect a difference in the level and also in the type of economic evidence employed by the justices. It also seems reasonable to expect a higher usage of classical models and theories in antitrust cases and less use of the variables associated with the political/social and conduct-structure-performance paradigm variables. Finally, one might expect to see a larger number of citations to "Chicagoans" in the opinions.

Economic Content Evidence. An examination of the first type of evidence discussed above, the level of economic content of antitrust cases, does not seem to support the contention of the "Chicago" theorists. That is, when the economic measures are examined across four time periods, the number of economic words as measured by ECONWORD is not significantly different between the third (1964-1975) and fourth

time periods (1976-1987). This indicates that economic content has not achieved relatively greater importance in the time period since Posner made his victory claim.

Speculation concerning these results might recognize the suggestion that the use of economic evidence in antitrust cases really kicked in during the 1964-75 time period and that the level has been maintained since then. Posner (1979), writing with a "Chicago" viewpoint, indicates that: "The sharpest differences with them ["Harvard" school of antitrust] are assignable to the 1950s and early 1960s (p. 925)." Since then, Posner believes, the schools have come closer together and by 1979 had merged under "Chicago" school leadership. Consequently, one might not see a large increase in the use of economic content, but one would expect to see a difference in the type of economic content.

One might also speculate that the impact of the federal justices, having completed their "pro-Chicago" economic seminars, is not yet being fully felt in the judicial system. An alternative, and perhaps more plausible explanation, is that the critics of these workshops may impute to them far too great an influence on the justices who attend. It would seem somewhat unlikely that independent judicial thinkers would change their whole view of the antitrust world because they attend one two-week workshop. It would also be unusual, if the justices accepted every argument given to them by the "pro-Chicagoans" and at the same time reject all of their previous notions developed from the study of over eighty-five years of antitrust case precedents. One might also expect that any impact from the seminars would be in the long-term, rather than

in the short-term (i.e., after the information is digested and tested by the judges). Obviously, an identification and pre/post evaluation of antitrust decisions of participants in the workshop, would be in order (however, not possible, because the attendees names are kept secret).

Yet one other feasible reason that there has not been an increase in the level of economic reasoning is that the Department of Justice is not bringing as many types of cases that merit full, economic analysis. Given that the Justice Department legal actions often perform a leader role for "follow-the-leader" private cases, this might account for fewer private cases that are focused on economic evidence. For example, there appears to be far fewer merger cases brought by the Justice Department between 1980-1987 and many more price fixing and restraint of trade cases. Merger cases tend to use a great deal of economic evidence, while price fixing cases tend to rely on legal evidence of behavior and on precedents. A research approach which evaluated the same mixture of cases over two or more time periods would be needed to test the above speculations.

Finally, one obvious reason that there is not a greater measure of economic evidence in recent years is that the measuring devices may simply not be sensitive enough to detect the differences. The measures are not designed to specifically test "only Chicago" and "only Harvard" or for comparing "Chicago" vs. "Harvard." It is also likely that the tools are oriented toward measuring the "level" of reasoning, when the most critical variable is the "type" of reasoning. That is, although the number of economic words in the text of the case opinion is not changing, the complexity and economic sophistication of the words used

might be much greater. The raw frequency data from the study show some support for each of these propositions.

Models and Theories Evidence. The second type of evidence that would support the "Chicago School" victory claim is a higher usage of classical models and theories in antitrust and less evidence related to political/social and the conduct-structure-performance paradigm. As suggested in the findings section (see p. 226-227), beginning in the mid-1960s, there seems to have been a movement toward the type of microeconomic evidence advocated by the "Chicago" theorists. The use of concepts such as demand elasticity and the use of pricing models (AEM-- Antitrust/Economic Models) shows a significant difference in the pre and post-1964 periods. On the other hand, the measure of economic evidence diversity (ECONFACT) shows no significant differences across either the four or two time periods in the study.

Given that many of the economic factors being measured by ECONFACT are closely related to the conduct-structure-performance model, one might expect to see changes or differences in this measure to reflect the "Harvard" approach preeminence in the 1964-mid 1970s and also to signal the "Chicago" school ascendancy. Thus, one type of evidence in this category shows some support for the "Chicago" school victory claim, while the other type is neutral. Some adjustments and fine tuning of the ECONFACT measure may be necessary to improve its effectiveness in uncovering differences in the use of economic evidence between cases and over time.

Citations Evidence. A third type of evidence that might support or refute the declaration of victory by the "Chicago School" are citations to their proponents. Some preliminary evidence is available in this area. Examining only Supreme Court level cases divided by the 1964-1975 and 1976-1987 time periods, there is some evidence to suggest a greater reliance on "Chicago" type thinking. That is, of the seven Supreme Court cases in the data base for the 1964-1975 period, only one of these cases had a citation to a "Chicago" proponent. Comparing this to the latter time period (1976-1987), there are four cases with citations to "Chicagoans." In one of these cases, Posner is cited seven separate times and in another, Bork is cited four times.

Further, Posner has stated (1979) that by the mid-1970s Areeda and Turner were adopting many, if not most, of the "Chicago" ideas on antitrust. If this is in fact the case, citations to Areeda and Turner's post 1974 works might also be considered as supporting the "Chicago" approach. This would add an additional two cases to the four above. Thus, six of the seven cases in the 1976-1987 would include citations to "Chicago School" thinking. Beyond the reasons postulated earlier, one of the reasons that the "Chicago School" may be given increasingly more weight in antitrust proceedings is that its major proponents are lawyers and judges (Bork, Posner, Areeda and Turner) with economics training, as opposed to the "Harvard" school proponents who are primarily economists. Lawyers know how to talk to and convince other lawyers, and legal audiences seem to be more willing to listen to one of their own.

In summary, it seems clear that the economic measures developed for this study pick up some of the differences in the economic content of case opinions. However, more research needs to be done with these tools and this type of analysis before definitive statements can be made. Recommendations concerning future research opportunities are made in a later section.

#### Implications of the Study

The results of this study are most important for business executives, economists, lawyers, and government antitrust officials. The implications for each of these groups are specified in greater detail in the following sections.

#### Implications for Business

Executives and decision makers in business are anxious to avoid antitrust problems. This is evidenced, in part, by the large legal staffs in many corporations that are charged with advising management regarding their decisions and behaviors. However, if forced to participate in an antitrust litigation process, business executives are anxious to prevail. To the extent that changes in the level and/or type of economic content reflect changes in the posture or thinking processes of the courts toward antitrust matters, it is imperative that executives be aware of these changes.

Changes in the level of economic content might be seen as a signaling device by business executives. For example, higher levels of economic content might be interpreted as reflecting an attitude by the courts that antitrust is judged primarily as an economic matter and is,

therefore, to be evaluated with economic evidence. This interpretation might send a signal to business executives to evaluate their decision alternatives in respect to the economic effects each is likely to have.

Changes in the level of economic content, combined with other information in the environment, might also indicate to businesses that there has been a change in the manner of thinking of the courts or enforcement agencies. This again might signal to them changes in permissible business behaviors. Perhaps tracking of the levels of economic content and accompanying environmental variables could lead to a set of propositions to guide business actions. For example:

Proposition One: Political administrations that espouse a "free enterprise" philosophy are likely to foster higher levels of economic content.

Proposition Two: A higher level of economic content is likely to lead to (or to reflect) more lenient antitrust enforcement.

and/or

Proposition Three: It takes at least two consecutive political administrations espousing a "free enterprise" philosophy to lead to an increase in the level of economic content of antitrust cases.

Proposition Four: A specific level of antitrust content (e.g., 20 economic words per 1000 case words) precedes new regulatory legislation.

Obviously, it is a very long stretch between identifying the level of economic content and developing propositions like those above. However, as discussed in the literature, economic tools are continually improving, as are the tools of content analysis. Future predictive capabilities, like the propositions above, may one day be possible.

There are two other aspects of this study that could have serious implications for the business sector of the economy. The first is an



improved predictability of the legal environment that many believe would accompany a "Chicago" victory. Business people frequently complain (see Burns, 1969, for example) about the uncertainty associated with antitrust in the United States. They seek a more certain environment that will permit them to develop longer range plans. A "Chicago" approach, many believe, promises a more certain environment built on a base of solid economic theory and interpretation.

Another aspect of a "Chicago" approach to antitrust is the expectations one might have from a "Chicago" oriented court for the business environment. For example, if "Chicago" has in fact been victorious, what does that mean to individual competitors and what does it mean to businesses that might become involved with antitrust litigation? Some critics contend that there would really not be a great deal of difference from what the United States is currently experiencing in regards to antitrust enforcement, while other critics believe that there will be even higher levels of neglect of the antitrust laws and even greater accumulation of power in the hands of fewer firms.

"Chicagoan's" avowed hostility to vertical constraints on businesses and their rejection of strategic behavior as a potentially anticompetitive process, will clearly permit business behavior that may have been prohibited in the past. For example, the vertical integration efforts of Kenney Shoe, condemned in the Brown Shoe Case (1961), would be permitted if "Chicago" thinking dominated the nation's courts. Further, strategic decisions, e.g., creating barriers to entry of new firms in an industry for the purpose of protecting one's own position, would not concern "Chicagoans."

There are many within the business ranks who see a "Chicago" spin on antitrust enforcement as ensuring a better, more competitive basis for American firms attempting to compete internationally. They believe, for example, that a "Chicago" approach will free American firms from many competitive regulations not experienced by foreign firms and which, therefore, results in an uneven playing field in favor of foreign firms. A "Chicago" approach, these critics of antitrust regulation believe, reduces the competitive advantage many foreign firms now have over American firms.

Another kind of implication for business is the potential value of the tools that have been developed for this study. These tools, i.e., the economic measures, might be helpful as a scanning device. Some businesses might find the information obtainable from periodic scanning of antitrust cases useful in their decision-making process. Perhaps use of the tools could reduce the risks associated with certain types of decisions. It is likely that more firms will take a more active role in the analysis of the antitrust environment, if the tools were available and relatively easy to use. This study provides at least a start in the development of a set of tools for scanning purposes.

#### Implications for Economists

There are a number of implications of the results of this study for economists. Economists might benefit, for example, from the finding concerning the economic content differences among court levels, particularly when they are involved as expert witnesses. There is a potential benefit to be derived from the examination of the patterns of

economic evidence among the courts for the purpose of advising those individuals or organizations involved in cases at each level.

Economists are responsible for the development of the methodologies that are being used to a greater extent in the antitrust courtroom. However, the pricing and competitive models might be better utilized, if they were supported by empirical evidence of their economic effects in different application situations. This type of support has the potential to uncover new theories and approaches to antitrust problems. For example, economists might attempt to relate the findings concerning the level and type of economic content in antitrust cases to other types of variables. An evaluation of these types of relationships could lead to an examination of the following types of issues: Will a higher level of economic content for cases involving territorial restriction lead to a better decisions and, therefore, improved economic performance? Which economic models or theories seem to work best with which types of antitrust offenses? What types of empirical evidence might support the use of specific economic models in antitrust cases?

Both the "Chicago" and "Harvard" groups claim that they have led the way in the antitrust revolution through their development and applications of tools for analysis. However, some of the tools associated with antitrust are still relatively primitive. At the same time economists have some responsibility to not only analyze, but also to help develop, public policy. Public policy ought to be based on good, solid research evidence to the greatest extent possible. Therefore, an additional implication of the results of this study in respect to economists is that the tools seem particularly well suited

for larger scale, intensive, and focused research effort. Within the antitrust law area, very little in the way of statistical research seems to be done, beyond the industry and the concentration/profits studies. Computerized content analysis tools seem well suited for antitrust/economic research.

#### Implications for Lawyers

One of the implications of the results of this study for lawyers is that it helps them develop greater insight into antitrust decisions. For example, by analyzing the most recent years' antitrust cases, lawyers might be able to discern the direction of the courts regarding the use of economic evidence. This information can also help in identifying judicial philosophy regarding antitrust. For example, if it is found that the "Chicago" school seems to be dominating, then it would be important for lawyers to focus their evidence on microeconomic models and issues. The analysis of the court decisions might also help determine the directions the courts are taking regarding the type of evidence that is important. These insights are especially important at the Supreme Court level.

Lawyers are keenly aware of the need for more research in the antitrust field. Their role is to keep their clients informed and aware of developments in antitrust. Law firms might find the research methodologies employed in this study as a real help for a variety of purposes, such as estimating antitrust trends, analyzing individual judges' decisions, and perhaps comparing decisions against one another. Information concerning the propensity of courts within a particular

district to use more or less economic evidence for specific types of cases is also likely to prove very useful to lawyers.

#### Implications for Antitrust Officials

Finally, there are also some very important implications of the results of this research for government antitrust officials. At the micro level, officials from departments and agencies responsible for antitrust enforcement, such as the Department of Justice and the Federal Trade Commission, will be interested in many of the same issues as the other groups already discussed. That is, they are interested in the trends in how the court is evaluating antitrust cases. This permits the agencies and departments to adjust their evidence and testimony accordingly. For example, if they believe that the Supreme Court is sympathetic to the "Chicago" school of antitrust, they might couch their arguments in "Chicago" school terms.

Similarly, if they believe that certain types of cases are going to be judged in a particular way (e.g., "Chicago" approach) they might adjust their thinking concerning which cases to bring to trial. Further, government antitrust officials might use the direction of court decisions to help them determine the spending priorities of their limited antitrust enforcement budget. The use of the tools of this study might also help antitrust enforcement personnel in selecting their arguments and expert witnesses.

The macroeconomic implications for government antitrust officials focus on the impact court decisions have on the American economic system and on the larger society. Is there evidence to show, for example, that one approach to antitrust is better than another? In what ways might a

"Chicago" approach improve our economic performance and in what ways might it harm the economy? What are the likely results of following one school of antitrust thought rather than another?

Government antitrust officials, charged with guiding the economic system, are interested in the impact different types of antitrust approaches might have on the structure of the American business system. They receive a great deal of input, often contradictory, from a variety of sources concerning the proper kind of guidance needed by our economy. The "Harvard" school approach, for example, has among its members some who would endorse a breakup of large companies to encourage a more competitive industry, or to simply diffuse the power that accrues to large accumulations of wealth. On the other hand, "Chicagoans" make no standard judgment in respect to the competitive effects of size. Some "Harvard" supporters contend that, too much emphasis (by the judiciary and the enforcement agencies) on the "Chicago" school approach to antitrust would lead to more highly concentrated industries. This would, in turn, lead to the disappearance of the small firm which is not able to compete with the Goliaths. Some of these critics see the struggle with the "Chicagoans" as nothing less than the saving of American democracy. Antitrust officials must decide whose counsel to accept. The tools of analysis developed for the study might help them make a better evaluation of the antitrust directions the courts have taken.

#### Recommended Future Research

There are several additional research avenues that have the potential to improve and supplement this initial effort at content

analysis of judicial opinions and that ought to be pursued. Several of the more fertile opportunities for additional research are reviewed in the paragraphs below.

One opportunity for further research involves a specification and testing of economics based dictionaries that permit a more thorough and in depth analysis of antitrust materials and/or other types of economic or law materials. For example, a specification of a "Chicago" antitrust dictionary and a "Harvard" dictionary might be attempted. These could then be tested against marker cases that have been identified in the literature as belonging to one school or another to ascertain each dictionary's ability to differentiate cases. Another type of expansion of the dictionaries might be the development of dictionaries that could identify antitrust cases which have high levels of political and social content. There are no readily available economic content analysis dictionaries and, consequently, very little content analysis research is done in this area of the social sciences.

Additional research into the general economic antitrust dictionary used for this study is also needed. The object of the research is to develop a dictionary that will accurately measure the level of economic content of printed material without requiring a line by line analysis of each word in context. This type of research has the potential to increase the amount of large sample research efforts in the antitrust area.

Micro analysis of individual judges' opinions also promises some benefit. This type of analysis might lead to the ability to identify the types of arguments that would result in the desired outcome for a

litigant. It might also have the potential to identify the predominant antitrust philosophy of select judges or of groups of judges (i.e., district vs. appellate level judges).

Another area of recommended research concerns the relationship between the level and types of economic evidence and the outcomes of the case. In order to accomplish this type of research, the case transcripts will have to be analyzed along with the case opinion. This would permit a differentiation of the arguments, as well as an evaluation of the amount and type of economic evidence used by the plaintiffs and defendants. Until this type of research is done, no conclusions can be drawn concerning the relationship between use of economic evidence by the litigants and the positive/negative outcomes of the cases.

Research into the relationship between the level of economic evidence in cases and external variables in the environment would also be useful. The following questions serve as examples of the focus this type of research effort might take: Are there variables in the environment that predict the direction of antitrust and the judgment standards used in antitrust cases? Does the level and type of economic evidence used in specific kinds of antitrust cases lead to optimal outcomes in the economy? Are there environmental variables that correlate highly with the economic content of antitrust cases?

Finally, further examination of the relationship between case variables and economic content is desirable on a larger research sample. In some instances, the small numbers of cases in particular categories prevented the researcher from drawing conclusions in this study. A larger sample, with attention to cases in specified categories, would



supplement the outcomes of this research. Part of this effort should involve new categories of cases, such as Federal Trade Commission hearings on antitrust violations, and landmark case decisions.

#### Conclusion

Antitrust regulation has engendered controversy almost from the day the Sherman Act was enacted over 90 years ago. It is not surprising, then, that it continues to create controversies and, in many cases, to raise the passions of those who seek to determine its directions. Antitrust is viewed from a diversity of perspectives. Many see it as a primarily economic document, others contend that it is a social-economic charter, and still others argue that it is one of the key components of the political (i.e., democratic) system. With all of these ascribed roles, is it any wonder that it raises such animated discussions!

The observations of an outside observer, the British economist A. D. Neale (1960), seem to confirm this state of turmoil:

Thus there are always controversies in progress as the different groups seek to persuade the legislature or the courts that the letter of the law or its interpretation should be amended in this direction or that. Antitrust is a running compromise in which distrust of power and the need for 'compliant' law usually have the largest say but in which the voices of economist and businessman, social reformer and lobbyist are heard in varying strengths at different times. . . . (p. 421)

Save for the use of the term antitrust, one might mistake Neale's comments as a description of the normal state of affairs that seem to exist in this democratic political system.

The disagreements surrounding antitrust are not likely to be resolved soon, if ever. However, the hoped for result is that the nation as well as the economy is improved by the process of debating

the issues. One would not expect less from a document that has been called the Magna Carta of American economic freedom.

B I B L I O G R A P H Y

## B I B L I O G R A P H Y

- Anspach, R. W. (1984). 10 years in court with 'Anti-Monopoly': The high cost of justice (II). Antitrust Law & Economics Review. 16(4), 15-30.
- Anspach, R. W. (1985). 10 years in court with 'Anti-Monopoly': The high cost of justice (III). Antitrust Law & Economics Review. 17, (1), 11.
- Areeda, P. (1974). Antitrust analysis (2nd ed.). Boston: Little, Brown, and Company.
- Areeda, P. (1981). Antitrust analysis: Problems, text, cases, Third Edition. Boston: Little, Brown, and Company.
- Areeda, P. (1983, September). Introduction to antitrust economics. Antitrust Law Journal, 52(3), 524-537.
- Areeda, P. & Turner, D. F. (1975). Predatory pricing and related practices under Section 2 of the Sherman Act. Harvard Law Review, 88, 697.
- Areeda, P. & Turner, D. F. (1976). Antitrust law. Boston: Little, Brown, and Company.
- Areeda, P. & Turner, D. F. (1978). Antitrust law, 1. Boston: Little, Brown, and Company.
- Areeda, P. & Turner, D. F. (1979). Williamson on predatory pricing. Yale Law Journal, 87, 284-340.
- Areeda, P. & Turner, D. F. (1980). Antitrust Law. Boston: Little, Brown, & Company.
- Armentano, D. (1982). Antitrust and monopoly: Anatomy of a policy failure. New York: Wiley.
- Asch, P. (1983). Industrial organization and antitrust policy. New York: John Wiley & Sons.
- Austin, A. D. (1972). The emergence of societal antitrust. New York University Law Review, 47, 903-927.
- Austin, A. D. (1976). Antitrust: Law, economics, policy. New York: Matthew Bender.
- Bain, J., (1956). Barriers to new competition. Cambridge, Mass: Harvard University Press.

- Bain, J. (1959). Industrial Organization. New York: John Wiley.
- Bain, J. (1968). Industrial Organization, (2nd ed.). New York: John Wiley.
- Bain, J. (1986). Structure vs. conduct as indicators of market performance: The Chicago School attempts revisited. Antitrust Law and Economics Review, 18(2), 17-49.
- Baumol, W. (1967). Business behavior, value and growth, (rev. ed.), 1-8.
- Berki, S. E. (Ed.). (1966). Antitrust policy economics and law. Boston: Heath.
- Berle, A. (1932). The modern corporation and private property. New York: Commerce Clearing House.
- Berelson, B. (1952). Content analysis in communications research. New York: Free Press.
- Berkman, D. (1963). Advertising in ebony and life: Negro aspiration vs. reality. Journalism Quarterly, 40(1), 53-64.
- Bickel, D. R. (1983). The Antitrust Division's adoption of a Chicago School economic policy calls for some reorganization: But is the Division's new policy here to stay? Houston Law Review, 20, 1083-1127.
- Blake, H. M. & Jones, W. K. (1965). The goals of antitrust: A dialogue on policy. Columbia Law Review, 65, 377-400, 422-466.
- Blake, H. M. & Jones, W. K. (1965). Toward a three-dimensional antitrust policy. Columbia Law Review, 65, 422, 439.
- Blake, H. M. & Jones, W. K. (1965). In defense of antitrust. Columbia Law Review, 65, 377.
- Blakeney, M. (1981). Price discrimination laws: An economic perspective. Duquene Law Review, 19, 479.
- Blumberg, P. I. (1971). The politicalization of the corporation. Boston University Law Review, 51, 425-433.
- Bock, B. (1964, June). Rediscovering economic realism in defining competition. Conference Board Record.
- Bok, D. C. (1960). Section 7 of the Clayton Act and the merging of law and economics. Harvard Law Review, 74, 234-237.

- Bork, R. (1954). Vertical integration and the Sherman Act: The legal history of an economic misconception. University of Chicago Law Review, 22, 157.
- Bork, R. (1965). The rule of reason and the per se concept: Price fixing and market division. Yale Law Journal, 74, 775, 831-32.
- Bork, R. (1965). Contrasts in antitrust theory, I. Columbia Law Review, 65, 401-416.
- Bork, R. (1966). Legislative intent and the policy of the Sherman Act. Journal of Law and Economics, 2, 7.
- Bork, R. (1978). The antitrust paradox: A policy at war with itself. New York: Basic Books.
- Bork, R. (1979, Summer). Comments on the proposal of Professor J. J. Flynn on no-fault monopoly. ABA Antitrust Law Journal, 48, 357.
- Bork, R. (1982). New merger enforcement policy and changes in practice: Guidelines--past, present and future. ABA Antitrust Law Journal 50, 175-242.
- Bork, R. & Bowman, W. S. (1965). The crises in antitrust. Columbia Law Review, 57, 363.
- Bowman, W. S. (1965). Contrasts in antitrust theory II. Columbia Law Review, 65, 417-418.
- Brodley, J. F. (1971). Massive industrial size, classical economics, and the search for human values. Stanford Law Review, 24, 1155.
- Brodley, J. F. (1977). Potential competition mergers: A structural synthesis. Yale Law Journal, 1, 34.
- Brozen, Y. (1971). Bains concentration and rates of return revisited. Journal of Law and Economics, 14, 351-69.
- Brozen, Y. (1974, Summer). Concentrations and profits: Does concentration matter? Antitrust Bulletin, 381-399.
- Brunner, T. W., Krattenmaker, T. G., Skitol, R. A., & Webster, A. A. (1985). Mergers in the new antitrust era. Washington, D.C.: The Bureau of National Affairs (BNA).
- Burns, J. W. (1969). Antitrust dilemma: Why Congress should modernize the antitrust laws. Brooklyn: Central Book.
- Calvani, T. & Siegfried, J. (1979). Economic analysis and antitrust law. Boston: Little, Brown and Company.

- Chamberlin, E. H. (1956). The Theory of Monopolistic Competition, (7th ed.). Cambridge MA: Harvard University Press.
- Clark, J. M. (1940). Toward a theory of workable competition. American Economic Review, 30, 241.
- Demsetz, H. (1973). Industry structure, market rivalry, and public policy. Journal of Law and Economics, 16, 1-10.
- Demsetz, H. (1973). The market concentration doctrine. American Enterprise Institute and Hoover Institution.
- Demsetz, H. (1974). Two systems of belief about monopoly. Industrial concentration: The new learning, ed by H. G. Goldschmid et al., 164.
- Dewesse, L. C. III (1976). Computer content analysis of printed media: A limited feasibility study. Public Opinion Quarterly, 40, 90-100.
- Dewesse, L. C. III (1977). Computer content analysis of "day-old" newspapers: A feasibility study. Public Opinion Quarterly, 41, 91-94.
- Dewey, D. (1964). The economic theory of antitrust: Science or religion? Virginia Law Review, 50, 413-434.
- Dewey, D. (1969). The theory of imperfect competition: A radical reconstruction. New York: Columbia University Press.
- Director, A. & Levi, E. H. (1956). Law and the future: Trade regulation. Northwestern Law Review, 51, 281.
- Dodd, E. M. (1932). For whom are corporate managers trustees? Harvard Law Review, 45, 1145.
- Einhorn, H. A. & Smith, W. P. (1968). Economic aspects of antitrust: Readings and cases. New York: Random House.
- Elzinga, K. G. (1977). The goals of antitrust: Other than competition and efficiency, what else counts? University Of Pennsylvania Law Review, 125, 1191-1213.
- Ferguson, C. E. (1978). Economic analysis, theory and applications. (third edition). Homewood, IL: Irwin.
- Flynn, J. J. (1977). Antitrust jurisprudence: A symposium on the economic, political and social goals of antitrust policy. University of Pennsylvania Law Review, 125, 1182-1190.
- Flynn, J. J. (1981). The misuse of economic analysis in antitrust litigation. Southwest University Law Review, 12, 335.

- Flynn, J. J. (1983). Reaganomics and antitrust enforcement: A jurisprudential critique. Utah Law Review, 269-312.
- Fusfeld, D. (1972, January), Post-post-Keynes: The shattered synthesis, Saturday Revue, 36-39.
- Galbraith, J.K. (1952). American capitalism: The concept of countervailing power. Boston: Houghton Mifflin.
- Gerbner, G. (1964). Ideological perspectives and political tendencies in news reporting. Journalism Quarterly, 41(4), 494-508.
- Goldschmid, H. G., Mann, H. M. & Weston J. F. (1974). Industrial concentration: The new learning. Boston: Little, Brown, and Company.
- Handler, M. (1973). Twenty-five years of antitrust. 1, New York: Matthew Bender.
- Handler, M., Blake, H., Pitofsky, R., & Goldschmid, H. J., (1975). Cases and materials on trade regulation. Mineola, New York: Foundation Press.
- Handler, M., Blake, H., Pitofsky, R., & Goldschmid, H. J., (1981). Trade Regulation: Cases and materials. Mineola, New York: Foundation Press.
- Handler, M & Robinson, S. (1965, January). The Supreme Court vs. corporate mergers. Fortune, 164.
- Hetherington, J. A. C. (1969). Fact and legal theory: Shareholders, managers, and corporate social responsibility. Stanford Law Review, 21, 248.
- Hirsch, F. (1976). Social Limits To Growth. Cambridge, MA: Harvard University Press.
- Hoffstader, R. (1965). What happened to the antitrust movement? The Parnoid Style Of American Politics, 188, 206.
- Horton, B. J. (1948). Dictionary of Modern Economics, Washington, D. C.: Public Affairs Press.
- Hurst, J. (1970). The legitimacy of the business corporation in the law of the United States. Saturday Review, 68.
- Jackson, R. H. & Dumbauld, E. (1938). Monopolies and the courts. Pennsylvania Law Review, 86, 232.
- Kauper, T. E. (1968). The "Warren Court" and the antitrust laws: Of economics, populism and cynicism. Michigan Law Review, 67, 325-334.



- Kaysen C. & Turner, D. (1959). Antitrust policy: An economic and legal analysis. Cambridge, MA: Harvard University Press.
- Klein, M. & Maccoby, N. (1954). Newspaper objectivity in the 1952 campaign. Journalism Quarterly, 31(3), 285-296.
- Krippendorff, K. (1980). Content analysis, an introduction to its methodology. Beverly Hills: Sage.
- Labov, W. (1972). Language in the inner city: Studies in the black English vernacular. Philadelphia: University of Pennsylvania Press.
- Lasswell, H. D. (1941). The world attention survey. Public Opinion Quarterly, 5, 456-462.
- Lasswell, H. D. (1960). Why be quantitative? in F. Furelson and M. Janowitz. Reaction in public opinion and communication. Free Press.
- Leff, A. (1974). Economic analysis of law: Some realism about nominalism. Virginia Law Review, 60, 451-466.
- Letwin, W. (1965). Law and economic policy in America: The evolution of the Sherman Antitrust Act. New York: Random House.
- Liebeler, W. J. (1978, August). Market power and competitive superiority in concentrated industries. U.C.L.A. Law Review, 25, 1231-1295.
- Lindblom, C. E. (1977). Politics and Markets: The world's political economic systems. New York: Basic Books.
- Lindsay, Cotton Mather (1983). Some antitrust advice for the FTC: "Go out of business." Antitrust Law and Economics Review, 15(1), 15-51.
- Loeventhal, L. (1944). Biographies in popular magazines: Radio Research 1942-43. New York: Duell, Sloan, and Pearce.
- Low, R. (1970). Modern economic organization. Homewood, IL: Irwin.
- McCloskey, D. N. (1985). The applied theory of price. (second edition), New York: MacMillan.
- McCracken, P. W. (1973). The Industrial Organization Act. Hearings on S.1167 before the Senate Subcommittee on Antitrust and Monopoly, Part 1. Washington, D.C. U.S. Government Printing Office.
- McCracken, P. & Moore, T. (1974). Competition and market concentration in the American economy. American Enterprise Institute for Public Policy Research, Reprint no. 25.
- McGee, J. S. (1971). In defense of industrial concentration. New York: Praeger.

- Mann, H. M. (1974). Structural antitrust cases: The benefit cost underpinnings. George Washington Law Review, 921.
- Manning, B. (1960). Corporate power and individual freedom. Northwestern Law Review, 55, 38.
- Mansfield, E. (1982). Micro-economics: Theory & applications (fourth Edition). New York: Norton.
- Marcus, P. (1980). Antitrust law and practice. St. Paul, MN: West Publishing.
- Markham, J.W. (1950, June). An alternative approach to the concept of workable competition. American Economic Review, 40(3), 349.
- Mishan, E. (1977). The economic growth debate: An assessment, 14-15 29-37.
- Mueller, C. E. (1976). The new antitrust: A 'structural' approach. Antitrust Law & Economics Review, 87-130.
- Mueller, W. F. (1979). The Celler-Kefauver Act: The first 27 years. A study for the use of the Subcommittee on Monopolies and Commercial Law of the Committee on the Judiciary, House of Representatives, 96th Congress, First Session.
- Mueller, W. F. (1981). The anti-antitrust movement and the case of Lester Thurow. Antitrust Law & Economics Review, 13(3), 59-91.
- Mueller, W. F. (1986). A new attack on antitrust: The Chicago case. Antitrust Law and Economics Review, 18, 29-66.
- Namenwirth, J. Z. (1973). The wheels of time and the interdependence of value change. Journal of Interdisciplinary History, 3 649-683.
- Neale, A. D. (1960). The antitrust laws of the United States of America. Cambridge, England: Cambridge University Press.
- Neale, A. D. (1970). The antitrust laws of the United States: A study of competition enforced by law, (2nd ed.). Cambridge, England: University Press.
- Peltzman, S. (1977). The gains and losses from industrial concentration. Journal of Law and Economics, 20, 229-264.
- Phelps, E. S. (1985). Political economy. an introductory text. New York: W. W. Norton.
- Pitofsky, R. (1979). The political content of antitrust. University of Pennsylvania Law Review, 127 1051.

- Porter, M. E. (1980). Competitive strategy: Techniques for analyzing industries and competition. New York: The Free Press.
- Posner, R. A. (1969). Oligopoly and the antitrust laws: A suggested approach. Stanford Law Review, 21, 1562-1575.
- Posner, Richard A. (1970). A statistical study of antitrust enforcement. The Journal of Law and Economics, 13, 365-419.
- Posner, R. A. (1972). Economic analysis of law. Boston: Little, Brown, and Co.
- Posner, R. A. (1976). Antitrust law, an economic perspective. Chicago: University of Chicago Press.
- Posner, R. A. (1979). Some uses and abuses of economics in law. University of Chicago Law Review, 46, 281, 301-306.
- Posner, R. A. (1979). The Chicago School of antitrust analysis. University of Pennsylvania Law Review, 127, 925.
- Posner, R. A. (1980, May). The economics of passing on: A reply to Harris and Sullivan. University of Pennsylvania Law Review, 128, 1274-1279.
- Posner, R. A. & Easterbrook, F. H. (1981). Antitrust cases, economic notes, and other materials (second edition). St. Paul, MN: West Publishing.
- Posner, R. A. & Easterbrook, F. H. (1984). Supplement to antitrust cases, economic notes, and other materials. (second edition). St. Paul, MN: West Publishing.
- Raiffa, H. (1977). Decision analysis. Reading, MA: Addison-Wesley.
- Santangelo, J. M. (1983). Configurations of antitrust law. DePaul Law Review, 32, 838-900.
- Scherer, F. M. (1980). Industrial market structure and economic performance, (2d ed.). Chicago: Rand McNally.
- Schmalensee, R. (1972). The economics of advertising. Amsterdam: North Holland.
- Schmalensee, R. (1979). On the use of economic models in antitrust: the Realemon case. University of Pennsylvania Law Review, 127, 994.
- Schumpeter, J. (1950). Capitalism, socialism, and democracy, (3rd ed.), London: George Allen and Unwin.
- Schwartz (1979). "Justice" and other non-economic goals of antitrust. University of Pennsylvania Law Review, 127, 1076.

- Shenefield, J. H. (1979). A conversation with John H. Shenefield held on October 6, 1978 at the American Enterprise Institute for Public Policy Research. The Institute. Washington D. C.: The Institute.
- Sherman, R. (1978). Antitrust policies and issues. Reading, MA: Addison-Wesley.
- Singer, E. M. (1968). Antitrust Economics. Englewood Cliffs, NJ: Prentice-Hall.
- Singer, E. M. (1981). Antitrust economics and legal analysis. Columbus, OH: Grid Publishing.
- Slesinger, R. E., and Kozik, E. (1967). The need for a new antitrust philosophy: What economics can contribute. Antitrust Law and Economics Review, 1, 105-116.
- Sosnick, S. (1958). A critique of concepts of workable competition. Quarterly Journal of Economics, 72, 380.
- Speed, J. G. (1893). Do newspapers now give the news? The Forum, 15, 705-711.
- Spivak, G. B. (1983, Mid-Summer). The Chicago School approach to single firm exercises of monopoly power: A response. Antitrust Law Journal, 52, 651-674.
- Stigler, G. J. (1964). A Theory of Oligopoly. Journal of Political Economy, 72, 44-61.
- Stigler, G. J. (1968). The organization of industry. Homewood, IL: Richard D. Irwin.
- Stocking, G. W. & Watkins, M. W. (1951). Monopoly and Free Enterprise. New York: The Twentieth Century Fund.
- Stone, P. J. & Others (1966). The general inquirer: A computer approach to content analysis. Cambridge, MA: M.I.T. Press.
- Sullivan, L. A. (1975). Book review. Columbia Law Review, 75, 1214-15.
- Sullivan, L. A. (1977). Economics and more humanistic disciplines: What are the sources of wisdom for antitrust? University of Pennsylvania Law Review, 125, 1214-1228.
- Swartz, T. R. (1979). Analyzing tax policy: A resource guide. New York: Joint Council on Economic Education.
- Swartz, T. R. & Bonello, F. J. (Eds.), (1982). Has antitrust policy gone too far? Taking sides: Clashing views on controversial economic issues. Guilford CN: The Dushkin Publishing Group.

- Telser, L. G. (1960). Why should manufacturers want fair trade? Journal of Law and Economics, 3, 86.
- Telser, L. G. (1964). Advertising and competition. Journal of Political Economics, 72, 537.
- Tenney, A. A. (1912). The scientific analysis of the press. Independent, 73, 895-898.
- Thorp, W. (1941). The structure of industry. Washington: U.S. Government Printing Office.
- Thorelli, H. (1955). The federal antitrust policy book. Washington, D. C.: United States Administrative Office of the U.S. Courts,
- Thurow, L. (1980, October 19). Let's abolish the antitrust laws. New York Times, F2.
- Turner, D. (1965). Conglomerate mergers and Section 7 of the Clayton Act. Harvard Law Review, 78, 1313.
- Van Cise, J. G. (1976). Understanding the antitrust laws, (1976 ed.). New York: Practising Law Institute.
- Warren, G. (1975). Antitrust in theory and practice. Columbus, OH: Grid.
- Weber, R. P. (1985). Basic content analysis. Beverly Hills, CA: Sage Publications.
- Weiss, L. (1971). Quantitative studies of industrial organization. Frontiers of Quantitative Economics. New York: North-Holland.
- Weiss, L. (1974). The concentration-profits relationship and antitrust. Industrial Concentration: The new learning, 189-193, 231.
- Weiss, L. (1979). The structure-conduct-performance paradigm and antitrust. University of Pennsylvania Law Review, 127, 1104-1140.
- Weisskopf, W. (1971). Alienation and economics. New York: Dutton.
- Williamson, O. E. (1963). Managerial discretion and business behavior. American Economic Review, 53, 1032, 1046.
- Williamson, O. E. (1964). The economics of discretionary behavior: Managerial objectives in a theory of the firm. Englewood Cliffs, NJ: Prentice-Hall.
- Williamson, O. E. (1968). Economics as an antitrust defense: The welfare trade-offs. American Economic Review, 58, 18-31.

PLEASE NOTE:

Duplicate page number(s); text follows.  
Filmed as received.

U·M·I

- Williamson, O. E. (1975). Markets and Hierarchies: Analysis and antitrust implications. New York: Free Press.
- Williamson, O. E. (1979). Assessing vertical market restrictions: Antitrust ramifications of the transaction cost approach. University of Pennsylvania Law Review, 127, 953.
- Wood, M. (1980). Alternatives and options in computer content analysis. Social Science Research, 9, 273-286.
- Commerce Clearing House, FEDERAL ANTITRUST "BLUEBOOK", 1940-1987.
- Publications Manual of the American Psychological Association (third edition), (1983). Washington D.C.: The American Psychological Association.
- United States Administrative Office of the U.S. Courts, (1940-1987). Annual report of the Director of the Administrative Office of the United States Courts. Washington: U.S. Government Printing Office.
- United States Bureau of the Census, (1982). Statistical abstract of the United States: 1982-1983, (103d edition). Washington: U.S. Government Printing Office.
- West Law, (1988). A Computer Data Base of Legal Cases, West Publishing Company St. Paul, MN.

A P P E N D I X A

Case Opinion Questionnaire



## CODING SHEET

## COLUMNS

1. CASE TITLE _____	
2. CASE DATE _____	(1-6)
3. CASE NUMBER _____	
1ST DIGIT - TIME PERIOD: 1 - 1940-1951 _____	
2 - 1952-1963 _____	
3 - 1964-1975 _____	
4 - 1976-1987 _____	
2ND DIGIT - COURT LEVEL: 1 - SUPREME COURT _____	
2 - APPELLATE COURT _____	
3 - DISTRICT COURT _____	
3RD DIGIT - CASE # IN PERIOD (1-7) _____	(7-9)
4. PLAINTIFF TYPE: 1 - PRIVATE _____	
2 - GOVERNMENT _____	(10)
5. TYPE OF VIOLATION:	
1 - MONOPOLIZATION _____	
2 - PRICE FIXING _____	
3 - PRICE DISCRIMINATION _____	
4 - EXCLUSIVE DEALING _____	
5 - RESALE PRICE MAIN. _____	
6 - BOYCOTT _____	
7 - TYING _____	
8 - OTHER _____	
(NOTE: MAY BE MORE THAN ONE CHARGE)	(11-13)
6. NATURE OF VIOLATION: 1 - VERTICAL _____	
2 - HORIZONTAL _____	
3 - CONGLOMERATE _____	
4 - OTHER _____	(14)
7. TYPE OF CHARGE: 1 - CIVIL _____	
2 - CRIMINAL _____	(15)
8. DECISION: 1 - FOR PLAINTIFF	
2 - FOR DEFENSE	
3 - MIXED	(16)

9. LENGTH OF DECISION (IN WORDS)	<u>(17-21)</u>
10. NUMBER OF ECONOMIC REFERENCES (WORD COUNT)	<u>(22-25)</u>
11. NUMBER OF CASE CITATIONS	<u>(26-27)</u>
12. NUMBER OF CITATIONS TO ECONOMISTS	<u>(28-29)</u>
13. NUMBER OF CITATIONS TO ECONOMIC JOURNALS AND/OR TEXTS	<u>(30-31)</u>
14. OTHER TYPES OF CITATIONS (LIST):  _____  _____  _____  _____  _____  _____  _____	<u>(32-33)</u>
15. POLITICAL PARTY IN POWER (PRESIDENCY): 1 - DEMOCRATS _____ 2 - REPUBLICANS _____	<u>(34)</u>
16. NUMBER OF CASES INITIATED BY DOJ:	<u>(35-37)</u>
17. GNP TREND (DATE CASE COMMENCED): 1 - INCREASE 2 - DECREASE	<u>(38)</u>

- 18. PERCENTAGE CHANGE IN GNP (IN CONSTANT 1982 DOLLARS; ROUNDED TO 1 DECIMAL PL.) (39-42)
  
- 19. NUMBER OF MERGERS COMPLETED (43-46)
  
- 20. NUMBER OF BUSINESS FAILURES (PER 10,000 BUSINESSES, ROUNDED TO NEAREST WHOLE #) (47-50)
  
- 21. SIZE OF PLAINTIFF (SALES IN MILLIONS) (CODE "00000" IF GOVT.) (51-55)
  
- 22. SIZE OF DEFENDANT (SALES IN MILLIONS) (CODE "00000" IF GOVT.) (56-60)
  
- 23. MARKET SHARE OF PLAINTIFF (CODE "00" IF GOVT.) (61-62)
  
- 24. MARKET SHARE OF DEFENDANT (CODE "00" IF GOVT.) (63-64)
  
- 25. NUMBER OF CITATIONS TO LAWYER-ECONOMISTS. (65-66)
  
- 26. NUMBER OF CITATIONS TO LEGAL-ECON.-ANTITRUST JOURNALS. (67-68)
  
- 27. GROSS NATIONAL PRODUCT IN BILLIONS OF 1982 DOLLARS. (69-74)
  
- 28. DEFENDANT TYPE: 1 - PRIVATE; 2 - GOVERNMENT (75)

PRODUCT OR LINE OF COMMERCE INVOLVED \_\_\_\_\_

SIZE OF GEOGRAPHIC MARKET \_\_\_\_\_

REMEDY: \_\_\_\_\_

\_\_\_\_\_



**PUBLICATIONS CITED:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**INSTITUTIONS CITED:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**OTHER CITATIONS:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**COMMENTS:**

JUDICIAL INTERPRETATION OF CASE:

CARD II:

27. CASE NUMBER

28. PER SE OFFENSE (1) \_\_\_\_\_  
 RULE OF REASON APPROACH (2) \_\_\_\_\_  
 OTHER (3) \_\_\_\_\_

29. EVALUATION OF:  
 CONDUCT (1); STRUCTURE (2); PERFORMANCE (3)  
 COMBINATION (4) \_\_\_\_\_  
 OTHER (5) \_\_\_\_\_

30. BASIC CONDITIONS: CODE "1" IF PRESENT,  
 CODE "0" IF NOT PRESENT

SUPPLY FACTORS:

\_\_\_\_ RAW MATERIALS  
 (7)

\_\_\_\_ TECHNOLOGY  
 (8)

\_\_\_\_ UNIONIZATION  
 (9)

\_\_\_\_ VALUE/WEIGHT  
 (10)

\_\_\_\_ BUSINESS ATTITUDES  
 (11)

\_\_\_\_ PUBLIC POLICIES  
 (12)

\_\_\_\_ PRODUCT DURABILITY  
 (13)

\_\_\_\_ OTHER: EXPLAIN  
 (14)

DEMAND FACTORS:

\_\_\_\_ PRICE ELASTICITY  
 (15)

\_\_\_\_ SUBSTITUTES  
 (16)

\_\_\_\_ RATE OF GROWTH  
 (17)

\_\_\_\_ CYCLES/SEASONS  
 (18)

\_\_\_\_ PURCHASE METHODS  
 (19)

\_\_\_\_ MARKETING TYPE  
 (20)

\_\_\_\_ GEOGRAPHIC MKT  
 (21)

\_\_\_\_ OTHER (EXPLAIN)  
 (22)

	<u>2</u>
	(1)
	<u>        </u>
	(2-4)
	<u>        </u>
	(5)
	<u>        </u>
	(6)
	<u>        </u>
	(7)
	<u>        </u>
	(8)
	<u>        </u>
	(9)
	<u>        </u>
	(10)
	<u>        </u>
	(11)
	<u>        </u>
	(12)
	<u>        </u>
	(13)
	<u>        </u>
	(14)
	<u>        </u>
	(15)
	<u>        </u>
	(16)
	<u>        </u>
	(17)
	<u>        </u>
	(18)
	<u>        </u>
	(19)
	<u>        </u>
	(20)
	<u>        </u>
	(21)
	<u>        </u>
	(22)

31. MARKET STRUCTURE: CODE "1" IF PRESENT  
 CODE "0" IF NOT PRESENT

____ NUMBER OF BUYERS AND SELLERS (23)	_____ (23)
____ DEGREE OF CONCENTRATION (24)	_____ (24)
____ MARKET SHARES (25)	_____ (25)
____ PRODUCT DIFFERENTIATION (26)	_____ (26)
____ BARRIERS TO ENTRY (27)	_____ (27)
____ COST STRUCTURES (28)	_____ (28)
____ VERTICAL INTEGRATION (29)	_____ (29)
____ CONGLOMERATENESS (30)	_____ (30)
____ OTHER: (31)	_____ (31)

32. CONDUCT: CODE "1" IF PRESENT  
 CODE "0" IF NOT PRESENT

____ PRICING BEHAVIOR (32)	____ INVESTMENT (36)	(32) _____
____ PRODUCT STRATEGY (33)	____ LEGAL TACTICS (37)	(33) _____
____ ADVERTISING (34)	____ CRIMINAL BEHAVIOR (38) (E.G. CONSPIRACY)	(34) _____
____ RESEARCH/INNOVATION (35)		(35) _____
____ OTHER (39)		(36) _____
		(37) _____
		(38) _____
		(39) _____

33. PERFORMANCE: CODE "1" IF PRESENT  
 CODE "0" IF NOT PRESENT

\_\_\_\_ PRODUCTION AND ALLOCATIVE EFFICIENCY (40)

\_\_\_\_ PROGRESS (41)

\_\_\_\_ TECHNOLOGY (42)

\_\_\_\_ FULL EMPLOYMENT (43)

\_\_\_\_ EQUITY (44)

\_\_\_\_ OTHER \_\_\_\_\_ (45)

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

34. ECONOMIC ANALYSIS:

\_\_\_\_ ECONOMIC MODELS (46)

- 0 - NONE PRESENT
- 1 - OLIGOPOLY
- 2 - PERFECT COMPETITION
- 3 - PERFECT MONOPOLY
- 4 - MONOPOLISTIC COMPETITION
- 5 - OTHER \_\_\_\_\_
- 6 - MORE THAN ONE MODEL PRESENT

(SPECIFY) \_\_\_\_\_



MICROECONOMIC CONCEPTS

(47)

0 - NONE PRESENT

1 - ELASTICITY \_\_\_\_\_

2 - EFFICIENCY EFFECTS

3 - MARGINAL ANALYSIS (COST, PRICE ETC.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4 - OTHER \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

5 - MORE THAN ONE CONCEPT DISCUSSED (SPECIFY)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
(47)

35.            SOCIO/POLITICAL CONCEPTS:

(48)

0 - NONE PRESENT

1 - NUMBER OF INDEPENDENT BUSINESS UNITS

2 - COMPETITORS VS. COMPETITION

3 - COMMUNITY EFFECTS

4 - LOSS OF JOBS/UNEMPLOYMENT

5 - OTHER (SPECIFY):

6 - MULTIPLE CONCEPTS DISCUSSED  
(SPECIFY NUMBERS FROM ABOVE):

\_\_\_\_\_  
(48)



37. NUMBER OF ECONOMIC WORDS PER 1,000 WORDS IN TEXT (ROUNDED TO NEAREST WHOLE NUMBER)	<u>(53-56)</u>
38. NUMBER OF CASE REFERENCES PER 1,000 WORDS IN TEXT (ROUNDED TO NEAREST WHOLE NUMBER)	<u>(57-60)</u>
39. TOTAL NUMBER OF ECONOMIC WORDS IN GENCORD ANALYSIS	<u>(61-65)</u>
40. TOTAL NUMBER OF CASE CITATIONS	<u>(66-68)</u>
41. TOTAL NUMBER OF UNIQUE WORDS	<u>(69)</u>

A P P E N D I X    B

Economic Words Counting Rules

## COUNT WORDS OR PHRASES WHICH ARE IN THE DICTIONARY AND:

1. are used to analyze economic situations and/or results.  
situations--e.g., fragmented market, competitive market  
results--"developed effective market control
2. are used to measure economic phenomena: "the fact that the rental specified was at times the total minimum amount required to be paid by the circuit"; aggregate costs; concentration ratios
3. are used to explain, describe, evaluate and/or label economic phenomena: buying power; barriers to entry
4. are used as tools of economic analysis: marginal revenue, marginal costs, demand curves
5. are used to categorize individuals or organizations for purposes of economic analysis: monopolist, oligopolist
6. are used to identify specific economic behaviors: collusion; price fixing
7. are also business terms or concepts, (e.g., assets, profits, debt, beneficial interest, investment, etc.) but are used to measure, describe, or discuss a firm's conduct, an industry's structure, and/or a firm or industry's performance vis a vis antitrust issues

YES: firms within the industry have averaged profits 20% higher than costs (profits measures industry performance, in this instance)

NO: XYZ Inc. had an 8% decrease in profits last year attributed to poor management performance (profits measure the individual firm's performance and, in this case, seems to bear no relationship to antitrust economic analysis)

## REJECT AS ECONOMIC CONTENT:

1. words or phrases which are used in a legal manner (i.e., imbedded in a legal context) rather than in an economic manner (i.e., imbedded in an economic context):

YES: "treated the master agreements as legitimate weapons of competition"

NO: "hence the existence of power to exclude competition when it is desired to do so is itself a violation"

2. economic words which serve a primary purpose of labeling or modifying another word and are not used to explain economic phenomena, characteristics, or actions:

NO: "or a pretext for an attempt to interfere directly with a competitors business" (competitor simply identifies and does not attempt analysis)

NO: "Blue Cross relied on pharmacy's supply invoices" (supply identifies the forms; not used in an economic sence)

3. economic words which are part of a book or publication title

## COUNTING RULES:

1. Count words that are part of phrases or multiple-word terms as a single occurrences--e.g., buying power, monopoly power, fixed prices would receive a count of "one" (do not count them when they appear a second time in the analysis under the latter alphabetized part of the term or phrase).
2. If an item appears several times in the text analysis summary, in an identical or near identical context, count each as a separate occurrence.

A P P E N D I X    C

**Table of Cases**

## TABLE OF CASES

1940-1951 Court Cases by LevelSupreme Court Cases:

1. Corn Products Refining Co., et al. vs. FTC; 65 Sct 961, 324 US 726.
2. Standard Oil vs. FTC; 71 Sct 240, 340 US 231.
3. Standard Oil Co. of Cal. and Standard Stations vs. United States; 69 Sct 1051, 337 US 293.
4. United States vs. Griffith, et al.; 68 Sct 941, 334 US 100.
5. United States vs. U.S. Gypsum Co.; 71 Sct 160, 340 US 76.
6. United States vs. National Lead Co., et al.; 67 Sct 1634, 332 US 319.
7. United States vs. Socony--Vacuum Oil Co., Inc., et al.; 60 Sct 811, 310 US 150.

Appellate Court Cases:

1. American Can Co. vs. Bruces Juices, Inc.; CAFla, 187 F2d 919.
2. Dipson Theatres, Inc., vs. Buffalo Theatres, Inc.; CANY, 190 F2d 951.
3. Wm. Goldman Theatres Inc. vs. Loew's, Inc.; 150 F2d 738.
4. Morton Salt Co. vs. FTC; CCA7, 162 F2d 949.
5. Carl E. Ring vs. Harold Spina, et al.; CCANY, 148 F2d 647.
6. Triangle Conduit & Cable Co., Inc., et al. vs. FTC; CCA7, 168 F2d 175.
7. United States vs. American Medical Assn., et al.; 110 F2d 703.



District Court Cases:

1. William G. Brosious vs. Pepsi Cola Co. & Cloverdale Sp. Co.; DCPa, 59 FSupp 429.
2. Hoffman vs. Riverside & Dan River Cotton Mills, Inc.; 55 FSupp 13.
3. United States vs. Aluminum Co. of America, et al.; 91 FSupp 333.
4. United States vs. General Electric, et al.; 82 FSupp 753.
5. United States vs. Paramount Pictures, Inc.; 85 FSupp 881.
6. United States vs. Pullman Co., et al.; 30 FSupp 123.
7. United States vs. The New York Great Atlantic and Pacific Tea Co., et al.; 67 FSupp 626.

1952-1063 Court Cases by LevelSupreme Court Cases:

1. *Brown Shoe vs. United States*; 82 SCt 1502; 370 US 294.
2. *Eastern Railroad Presidents Conference, et al. vs. Noerr Motor Freight Inc., et al.*; 81 SCt 523; 365 US 127.
3. *Federal Trade Commission vs. Sun Oil Co.*; 83 SCt 358; 371 US 505.
4. *International Boxing Club of NY, Inc. vs. United States*; 79 SCt 245; 358 US 242.
5. *Moore vs. Meads Fine Bread Co.*; 75 SCt 148; 348 US 115.
6. *United States vs. Oregon State Medical Society, et al.*; 72 SCt 690; 343 US 326.
7. *United States vs. Philadelphia National Bank*; 83 SCt 1715; 374 US 321.

Appellate Court Cases:

1. *Advertising Specialty National Association, et al. vs. Federal Trade Commission*; 238 F2d 108.
2. *Eagle Lion Studios, Inc. vs. Loew's Inc.*; CANY 248 F2d 438.
3. *P. Lorillard Co. vs. Federal Trade Commission*; CA3 267 F2d 439.
4. *National Wrestling Alliance vs. Myers*; CAIowa 325 F2d 768.
5. *Noerr Motor Freight, Inc. vs. Eastern Railroad President's Conference*; CAPA 273 F2d 218.
6. *Rogers vs. Douglas Tobacco Board of Trade*; CAGA 266 F2d 636.
7. *Union Leader Corp. vs. Newspapers of New England, Inc.*; CAMass 284 F2d 582.

District Court Cases:

1. Banana Distributors, Inc. vs. United Fruit Co.; 162 FSupp 32
2. Hughes Tool Co. vs. R. W. Ford; 114 FSupp 525.
3. Riss & Co., Inc., vs. Assn. of American RR.; 170 FSupp 354.
4. United States vs. Bitz; DCNY 179 FSupp 80.
5. United States vs. Crocker--Anglo National Bank; 223 FSupp 125.
6. United States vs. El Paso Natural Gas Co. and Pacific NW Pipeline Co.; DCUtah 291 FSupp 3.
7. United States vs. United Liquors Corp.; DCTenn, 149 FSupp 609.

1964-1975 Court Cases by LevelSupreme Court Cases:

1. Citizen Pub. Co., et al. vs. United States; 89 SCt 927; 394 US 131.
2. Federal Trade Commission, Petitioner vs. The Borden Co.; 86 SCt 1092; 383 US 637.
3. Federal Trade Commission vs. Proctor & Gamble Co.; 87 SCt 1224; 386 US 568.
4. United States vs. Arnold, Schwinn and Co.; 87 SCt 1856; 388 US 365.
5. United States vs. General Motors Corp., et al.; 86 SCt 1321; 384 US 127.
6. United States vs. Grinnell Corp.; 86 Sct 1698; 384 US 563.
7. United States vs. Marine Bancorporation, Inc., et al; 94 SCt 2856; 418 US 602.

Appellate Court Cases:

1. Coleman Motor Co. vs. Chrysler Co.; CAPa 525 F2d 1338.
2. Hallmark Industry vs. Reynolds Metals Co.; CACal 489 F2d 8.
3. M. C. Manufacturing Co. vs. Texas Foundries Inc., et al.; CATex, 517 F2d 1059.
4. Missouri Portland Cement Co. vs. Cargill, Inc.; CAYN 498 F2d 851.
5. Northern Natural Gas Co., vs. Federal Power Commission; 399 F2d 953.
6. Jos. E. Seagram and Sons, Inc. vs. Hawaiian Oki and Liquors CA Hawaii, 416 F2d 71.
7. Worthen Bank & Trust Co. vs. National BankAmericard, Inc.; CAArk 485 F2d 119.

District Court Cases:

1. Cal Distributing Co. vs. Bay Distributors, Inc.; DCFla, 337 FSupp 1154.
2. Christiansen vs. Mechanical Contractors Bid Depository; DCUtah, 230 FSupp 186.
3. Fortner Enterprises Inc. vs. U.S. Steel Corp.; DCKy, 293 FSupp 762.
4. ICM Realty vs. Cabot, Cabot & Forbes Land Trust; DCNY, 378 FSupp 918.
5. Intermar, Inc. vs. Atlantic Richfield Co.; DCPa, 364 FSupp 82.
6. Schnapps Shop, Inc. vs. Wright & Co., Ltd; DCMd, 377 FSupp 570.
7. United States vs. G. Heileman Brewing, Inc. & Assoc. Brewing; DCMich, 345 FSupp 117.

1976-1987 Court Cases by LevelSupreme Court Cases:

1. Alexander Fisher, et al. vs. City of Berkeley, California, et al.; 106 Sct 1045, 475 US 260.
2. Aspen Skiing Co. vs. Aspen Highlands Skiing Corp.; 105 Sct 2847, 472 US 585.
3. BankAmerica Corp., et al. vs. United States; 103 Sct 2266, 462 US 122.
4. Brunswick Corp. vs. Pueblo Bowl-O-Mat, Inc. et al.; 97 Sct 690, 429 US 477.
5. Catalano, Inc., et al. vs. Target Sales, Inc., et al.; 100 Sct 1925, 446 US 643.
6. Continental T.V., Inc. vs. GTE Sylvania, Inc.; 97 Sct 2549, 433 US 36.
7. United States vs. US Gypsum Co., et al.; 98 Sct 2864; 438 US 422.

Appellate Court Cases:

1. Battle vs. Lubrizol Corp.; CAMo 673 F2d 984.
2. M&H Tire Co., Inc. vs. Hoosier Racing Tire Corp., et al.; 733 F2d 973.
3. O'Byrne vs. Cheker Oil Co.; 727 F2d 159.
4. Pacific Stationery and Printing Co. vs. Northwest Wholesale Stationers, Inc.; 715 F2d 1393.
5. Floyd H. Plueckhahn vs. Farmers Insurance Exchange, et al.; 749 F2d 241.
6. United States vs. Brighton Building and Maintenance Co.; CA111, 598 F2d 1101.
7. Wilson Industries, Inc. vs. Chronicle Broadcasting Co.; 794 F2d 1359.

District Court Level:

1. Associated Radio Service Co. vs. Page Airways, Inc.; 414 FSupp 1088.
2. Garshman vs. Universal Resources Holding, Inc.; 625 FSupp 737.
3. Martindell vs. News Group Pub., Inc.; DCNY, 621 FSupp 672.
4. Medical Arts Pharmacy of Stamford, Inc., et al., vs. Blue Cross & Blue Shield of Conn., Inc.; 518 FSupp 1100.
5. Midcon Corp. vs. Freeport-McMoran, Inc.; 625 FSupp 1475.
6. Midwest Milk Monopoly; DCMo, 529 FSupp 1326.
7. Satellite Financial Planning Corp. vs. First Natl. Bank of Wilmington, et al.; 633 FSupp 386.

A P P E N D I X    D

Economic Word Dictionary



E C O N O M I C     D I C T I O N A R Y

abuse	arbitrage
Baumol	asset
Coase	assets
Coase's	associations
Cobb-Douglas	atomism
Constitution	atomistic
Cournot	autarchy
Dorfman-Steiner	authoritarianism
Edgeworth	autocracy
Engel	autocratic
Engel's	automation
Giffen	backward-bending
Giffen's	barometer
Gini	barometric
Herfindahl	barrier
Herfindahl-Hirschman	barriers
Index	benefit
Industrial	benefit-cost
Jefferson	benefits
Jeffersonian	bid
Keynes	bilateral
Keynesianism	boycott
Laffer	break-even
Lerner	budget
Long-run	budgetary
Lorenz	buyer
Markham	buyers
Pareto	buying
Phillips	capacities
Pigou	capacity
SIC	capital
Schumpeterian	capitalism
absolute	capitalistic
acceleration	capitalization
accumulation	carrying
acquisition	cartel
acquisitions	cartels
administered	caveat
advantage	chrematistics
advertising	classical
agglomeration	cobweb
aggregate	coefficient
agio	coefficients
allocation	coercion
allocative	collaboration
allotments	collective
alternative	collectivism
analysis	collusion
anarchy	collusive
anti-competitive	combination
anticompetitive	combine

commercialism  
comparative  
compensated  
compensating  
compete  
competing  
competition  
competitive  
competitors  
complement  
complementary  
concavity  
concentrated  
concentration  
concession  
conduct  
conglomerate  
consensus  
conspicuous  
conspiracy  
constant-cost  
constitution  
constitutional  
constraints  
consumer  
consumerism  
consumers  
consumers'  
consumption  
contractarianism  
control  
controlled  
controlling  
controls  
convenience  
convexity  
coporatist  
cordination  
corner  
corrective  
cost  
cost-benefit  
cost-plus  
cost-reducing  
costs  
counterbalancing  
counterfactuals  
countervailing  
crowding  
cumulative  
curve  
curves  
cut-throat  
cutting

cycle  
cycles  
dead-weight  
deadweight  
debt  
decrease  
decreased  
decreasing  
deflation  
demand  
demanded  
demanding  
demands  
demand-pull  
demand-side  
democracy  
depreciation  
depression  
derived  
deter  
determinants  
determinism  
deterrence  
dialectical  
differentials  
differentiated  
differentiation  
diminishing  
discounting  
discrimination  
discriminatory  
diseconomies  
diseconomy  
disequilibrium  
disincentive  
disincentives  
distortion  
distribution  
distributive  
disutility  
diversification  
divest  
divested  
divesting  
divestiture  
dominant  
dominant-firm  
dual  
duality  
duopoly  
duopsony  
durable  
econometric  
econometrics

economic  
economic theory  
economics  
economies  
economy  
effect  
effective  
effects  
efficiency  
efficient  
effluent  
egalitarianism  
elastic  
elasticities  
elasticity  
employed  
employment  
endogenous  
entrant  
entrants  
entrepreneur  
entropy  
entry  
equal  
equality  
equilibrium  
equimarginality  
equity  
ethical  
ethics  
excess  
exchange  
exclusionary  
exclusive  
exhaustion  
exit  
exogeneous  
expansion  
expenditure  
exploitation  
external  
externalities  
externality  
factor  
factors  
failing  
failure  
fair  
fairness  
fetishism  
fiscal  
fittest  
fixed  
fixed-proportion  
fixing  
fixity  
flexibility  
forecasts  
foreclosure  
forestalling  
free  
freedom  
friction  
function  
functions  
fungibility  
fungible  
glut  
good  
goods  
greed  
gross  
guidelines  
heterogeneity  
heterogeneous  
homogeneity  
homogeneous  
honesty  
horizontal  
imitative  
imperfect  
imperfectly  
implicit  
imputation  
imputed  
incentive  
incentives  
incipient  
incipiency  
income  
income-consumption  
income-sharing  
increasing  
increasing-cost  
increment  
incremental  
independent  
index  
indexation  
indifference  
indifference curve  
indirect  
individual  
individualism  
individualistic  
inducement  
industry  
inefficiencies

inefficiency	market-rigging
inelastic	market-sharing
inequality	markets
inferior	maximization
infinite	maximizing
inflation	maximum
information	merger
innovation	mergers
innovations	microeconomic
input	microeconomics
input-output	minimization
input-price	minimizing
inputs	minimum
integration	minorities
interchangeability	misallocation
interdependence	mixed
interdependent	model
interest	monetarism
interindustry	monetary
intertemporal	monopolies
intervention	monopolistic
invention	monopolistically
investment	monopolists
invisible	monopolization
isocost	monopolize
isoprofit	monopoly
isoquant	monopsony
isoquants	moral
isorevenue	morality
joint	motive
just	multi-plant
justice	multi-product
justification	multilateral
kinked	multiplant
laissez	multiplicity
large-scale	multiplier
lateral	negative
leader	neo-egalitarian
leaders	neo-egalitarianism
leadership	neoclassical
least	nominal
legal	non-price
legality	nonintersecting
leverage	nonpecuniary
lexicographic	nonprice
liberalism	nonscarcity
libertarianism	nonvariable
long-run	normal
low-cost	normative
macroeconomic	oligopolist
macroeconomics	oligopolistic
margin	oligopolists
marginal	oligopoly
market	oligopsony

opportunities  
 opportunity  
 optimal  
 optimality  
 optimum  
 organization  
 organizations  
 output  
 outputs  
 overhead  
 parallelism  
 pareto  
 parity  
 perfect  
 perfectly  
 performance  
 persistence  
 phases  
 planned  
 policy  
 political  
 politically  
 politics  
 pollution  
 polyarchy  
 polypoly  
 pooling  
 possibilities  
 possibility  
 potential  
 power  
 predatory  
 preferences  
 present-value  
 price  
 price system  
 price-consumption  
 price-cost  
 price-fixing  
 priced  
 prices  
 pricing  
 private  
 procompetitor  
 procompetitive  
 procompetition  
 producer's  
 product  
 products  
 production  
 productive  
 productivity  
 profit  
 profitability  
 profits  
 progressive  
 progressiveness  
 propensity  
 proportional  
 proportionality  
 proportions  
 proration  
 protection  
 psychological  
 public  
 pure  
 quality  
 quantitative  
 quantity  
 quasi  
 quasi-rents  
 rate  
 ratio  
 rational  
 rationality  
 rationalization  
 rationing  
 ratios  
 reallocation  
 reciprocity  
 redistribution  
 refusals  
 regulation  
 relationship  
 relative  
 relativity  
 relevant  
 resale  
 residual  
 resource  
 resources  
 responsibility  
 restraint  
 restrictions  
 restrictive  
 return  
 returns  
 revenue  
 rigidity  
 risk  
 rival  
 rivals  
 sales  
 satiable  
 satisfaction  
 satisficing  
 saturation  
 saving

scarcity  
seasonal  
secular  
security  
segmental  
seigniorage  
self-fulfillment  
sell  
seller  
sellers  
selling  
share  
sharing  
short-run  
signal  
signalling  
skimming  
slack  
social  
socialism  
socialist  
socio-political  
sovereignty  
specialization  
spheres  
stability  
standards  
static  
statics  
stationary  
strategic  
strategy  
structural  
structure  
structure-performance  
subsidation  
subsidy  
substitutability  
substitute  
substitution  
substitutions  
sunk  
supernormal  
suppliers  
supplies  
supply  
supply-side  
supports  
surplus  
survival  
syndicate  
tacit  
take-overs  
takeovers

tastes  
technological  
technology  
technology-push  
technostructure  
theorem  
theory  
threshold  
tie-in-sale  
total  
totalitarianism  
trade  
transaction  
transfer  
transformation  
transivity  
trickle-down  
trust  
turnover  
tying  
uncertainty  
unfair  
unit  
unitary  
unitization  
utilitarianism  
utility  
utils  
utopian  
valorem  
valuation  
value  
variable  
variation  
vertical  
warfare  
warring  
wealth  
welfare  
windfalls  
workable  
worth  
x-inefficiency  
zero  
zero-sum

A P P E N D I X    E

**ANOVA Tables**

ANOVA TABLES

Economic Measures in Four Time Periods (Table 4-5)

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONWORD		ECON WORDS PER 1000		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	712.11845238	237.37281746	2.66
ERROR	80	7146.63047619	89.33288095	PR > F
CORRECTED TOTAL	83	7858.74892857		0.0539
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.090615	63.4488	9.45160732	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	712.11845238	2.66	0.0539

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE: ECONWORD  
 NOTE: THIS TEST CONTROLS THE TYPE I COMPARISONWISE ERROR RATE,  
 NOT THE EXPERIMENTWISE ERROR RATE

ALPHA=0.05 DF=80 MSE=89.3329

NUMBER OF MEANS	2	3	4
CRITICAL RANGE	5.81079	6.11025	6.30477

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

DUNCAN	GROUPING	MEAN	N	CASE1
	A	17.448	21	3
	A			
	A	17.229	21	4
	A			
B	A	14.695	21	1
B				
B		10.214	21	2



ANOVA TABLES

Economic Measures in Four Time Periods (Table 4-5)

ANALYSIS OF ECONFACT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONFACT		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	64.23809524	21.41269841	0.88
ERROR	80	1947.04761905	24.33809524	PR > F
CORRECTED TOTAL	83	2011.28571429		0.4552
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.031939	59.0317	4.93336551	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	64.23809524	0.88	0.4552

ANALYSIS OF ECONTHEO

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONTHEO				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	18.89285714	6.29761905	1.26
ERROR	80	399.52380952	4.99404762	PR > F
CORRECTED TOTAL	83	418.41666667		0.2934
R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN	
0.045153	243.7894	2.23473659	0.91666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	18.89285714	1.26	0.2934

A N O V A    T A B L E S

294

Economic Measures in Four Time Periods (Table 4-5)

ANALYSIS OF PTM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: PTM		PURE THEORY MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	3.13646103	1.04548701	1.38
ERROR	80	60.49633206	0.75620415	PR > F
CORRECTED TOTAL	83	63.63279310		0.2541

R-SQUARE	C.V.	ROOT MSE	PTM MEAN
0.049290	231.8057	0.86959999	0.37514172

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	3.13646103	1.38	0.2541

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: AEM		ANTITRUST-ECON MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	7.28649111	2.42883037	1.80
ERROR	80	107.65792293	1.34572404	PR > F
CORRECTED TOTAL	83	114.94441404		0.1530

R-SQUARE	C.V.	ROOT MSE	AEM MEAN
0.063391	207.2762	1.16005346	0.55966553

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	7.28649111	1.80	0.1530

ANALYSIS OF ECONCITE

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONCITE		CITATIONS TO ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	40.89285714	13.63095238	1.91
ERROR	80	569.80952381	7.12261905	PR > F
CORRECTED TOTAL	83	610.70238095		0.1340

R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN
0.066960	344.8941	2.66882353	0.77380952

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	40.89285714	1.91	0.1340

ANOVA TABLES

295

Economic Measures in Four Time Periods (Table 4-5)

ANALYSIS OF ECLITCIT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECLITCIT		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	1.95238095	0.65079365	0.56
ERROR	80	92.28571429	1.15357143	PR > F
CORRECTED TOTAL	83	94.23809524		0.6402

R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN
0.020718	410.0897	1.07404443	0.26190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	1.95238095	0.56	0.6402

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LAWECON		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	304.09523810	101.36507937	1.59
ERROR	80	5090.57142857	63.63214286	PR > F
CORRECTED TOTAL	83	5394.66666667		0.1976

R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN
0.056370	217.5539	7.97697580	3.66666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	304.09523810	1.59	0.1976

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ANTIJOUR		CITES TO LEGAL/ECON ANTITRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	42.70238095	14.23412698	2.89
ERROR	80	394.28571429	4.92857143	PR > F
CORRECTED TOTAL	83	436.98809524		0.0406

R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN
0.097720	219.3921	2.22003861	1.01190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE1	3	42.70238095	2.89	0.0406

ANOVA TABLES

Economic Measures in Four Time Periods (Table 4-5)

ANALYSIS OF TECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TECITES		TOTAL ECONOMIC CITES			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	3	51.27380952	17.09126984	1.38	
ERROR	80	989.61904762	12.37023810	PR > F	
CORRECTED TOTAL	83	1040.89285714		0.2544	
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN		
0.049259	339.5854	3.51713493	1.03571429		
SOURCE	DF	ANOVA SS	F VALUE	PR > F	
CASE1	3	51.27380952	1.38	0.2544	

ANALYSIS OF TAECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TAECITES		TOTAL ANTITRUST-ECON CITES			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	3	516.32142857	172.10714286	1.86	
ERROR	80	7412.00000000	92.65000000	PR > F	
CORRECTED TOTAL	83	7928.32142857		0.1435	
R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN		
0.065124	205.7356	9.62548700	4.67857143		
SOURCE	DF	ANOVA SS	F VALUE	PR > F	
CASE1	3	516.32142857	1.86	0.1435	

A N O V A    T A B L E S

297

Economic Measures in Two Time Periods (Table 4-6)

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONWORD		ECON WORDS PER 1000		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	500.78583333	500.78583333	5.58
ERROR	82	7357.96309524	89.73125726	PR > F
CORRECTED TOTAL	83	7858.74892857		0.0205
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.063723	63.5901	9.47265841	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	500.78583333	5.58	0.0205

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: ECONWORD  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05    DF=82    MSE=89.7313  
 CRITICAL VALUE OF F=3.95739  
 MINIMUM SIGNIFICANT DIFFERENCE=4.1121

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	YEARGRP
A	17.338	42	2
B	12.455	42	1

ANALYSIS OF ECONFACT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONFACT		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	2.33333333	2.33333333	0.10
ERROR	82	2008.95238095	24.49941928	PR > F
CORRECTED TOTAL	83	2011.28571429		0.7584
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.001160	59.2270	4.94968881	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	2.33333333	0.10	0.7584

A N O V A    T A B L E S

298

Economic Measures in Two Time Periods (Table 4-6)

ANALYSIS OF ECONTHEO

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONTHEO

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	16.29761905	16.29761905	3.32
ERROR	82	402.11904762	4.90389082	PR > F
CORRECTED TOTAL	83	418.41666667		0.0719

R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN
0.038951	241.5789	2.21447304	0.91666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	16.29761905	3.32	0.0719

ANALYSIS OF PTM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: PTM

PURE THEORY MODEL

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	2.59002976	2.59002976	3.48
ERROR	82	61.04276334	0.74442394	PR > F
CORRECTED TOTAL	83	63.63279310		0.0657

R-SQUARE	C.V.	ROOT MSE	PTM MEAN
0.040703	229.9931	0.86280006	0.37514172

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	2.59002976	3.48	0.0657

ANOVA TABLES

Economic Measures in Two Time Periods (Table 4-6)

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: AEM		ANTITRUST-ECON MODEL			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	1	6.58712736	6.58712736	4.98	
ERROR	82	108.35728668	1.32143033	PR > F	
CORRECTED TOTAL	83	114.94441404		0.0283	
R-SQUARE	C.V.	ROOT MSE	AEM MEAN		
0.057307	205.3968	1.14953483	0.55966553		
SOURCE	DF	ANOVA SS	F VALUE	PR > F	
YEARGRP	1	6.58712736	4.98	0.0283	

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

SCHIFFE'S TEST FOR VARIABLE: AEM  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05 DF=82 MSE=1.32143  
 CRITICAL VALUE OF F=3.95739  
 MINIMUM SIGNIFICANT DIFFERENCE=.49902

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHIFFE	GROUPING	MEAN	N	YEARGRP
	A	0.8397	42	2
	B	0.2796	42	1

ANALYSIS OF ECONCITE

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONCITE		CITATIONS TO ECONOMISTS			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	1	14.58333333	14.58333333	2.01	
ERROR	82	596.11904762	7.26974448	PR > F	
CORRECTED TOTAL	83	610.70238095		0.1605	
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN		
0.023880	348.4380	2.69624637	0.77380952		
SOURCE	DF	ANOVA SS	F VALUE	PR > F	
YEARGRP	1	14.58333333	2.01	0.1605	

ANOVA TABLES

300

Economic Measures in Two Time Periods (Table 4-6)

ANALYSIS OF ECLITCIT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECLITCIT		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.42857143	0.42857143	0.37
ERROR	82	93.80952381	1.14401858	PR > F
CORRECTED TOTAL	83	94.23809524		0.5422

R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN
0.004548	408.3882	1.06958804	0.26190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	0.42857143	0.37	0.5422

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LAWECON		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	246.85714286	246.85714286	3.93
ERROR	82	5147.80952381	62.77816492	PR > F
CORRECTED TOTAL	83	5394.66666667		0.0507

R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN
0.045759	216.0891	7.92326731	3.66666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	246.85714286	3.93	0.0507

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

DUNCAN'S MULTIPLE RANGE TEST FOR VARIABLE: LAWECON  
 NOTE: THIS TEST CONTROLS THE TYPE I COMPARISONWISE ERROR RATE,  
 NOT THE EXPERIMENTWISE ERROR RATE

ALPHA=0.05 DF=82 MSE=62.7782

NUMBER OF MEANS 2  
 CRITICAL RANGE 3.44325

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

DUNCAN	GROUPING	MEAN	N	YEARGRP
	A	5.381	42	2
	A	1.952	42	1



A N O V A    T A B L E S

301

Economic Measures in Two Time Periods (Table 4-6)

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ANTIJOUR		CITES TO LEGAL/ECON ANTITRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	36.01190476	36.01190476	7.36
ERROR	82	400.97619048	4.88995354	PR > F
CORRECTED TOTAL	83	436.98809524		0.0081

R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN
0.082409	218.5308	2.21132393	1.01190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	36.01190476	7.36	0.0081

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: ANTIJOUR  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05    DF=82    MSE=4.88995  
 CRITICAL VALUE OF F=3.95739  
 MINIMUM SIGNIFICANT DIFFERENCE=.95995

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	YEARGRP
A	1.6667	42	2
B	0.3571	42	1

ANALYSIS OF TECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TECITES		TOTAL ECONOMIC CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	20.01190476	20.01190476	1.61
ERROR	82	1020.88095238	12.44976771	PR > F
CORRECTED TOTAL	83	1040.89285714		0.2084

R-SQUARE	C.V.	ROOT MSE	TECITES MEAN
0.019226	340.6753	3.52842284	1.03571429

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	20.01190476	1.61	0.2084

A N O V A T A B L E S

302

Economic Measures in Two Time Periods (Table 4-6)

ANALYSIS OF TAECITES

ANALYSIS OF VARIANCE PROCEDURE.

DEPENDENT VARIABLE: TAECITES		TOTAL ANTITRUST-ECON CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	471.44047619	471.44047619	5.18
ERROR	82	7456.88095238	90.93757259	PR > F
CORRECTED TOTAL	83	7928.32142857		0.0254

R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN
0.059463	203.8255	9.53611937	4.67857143

SOURCE	DF	ANOVA SS	F VALUE	PR > F
YEARGRP	1	471.44047619	5.18	0.0254

ANALYSIS OF TAECITES

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: TAECITES  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05 DF=82 MSE=90.9376  
 CRITICAL VALUE OF F=3.95739  
 MINIMUM SIGNIFICANT DIFFERENCE=4.1397

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	YEARGRP
A	7.048	42	2
B	2.310	42	1

Economic Measures at Three Court Levels (Table 4-7)

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONWORD		ECON WORDS PER 1000			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	2	610.53642857	305.26821429	3.41	
ERROR	81	7248.21250000	89.48410494	PR > F	
CORRECTED TOTAL	83	7858.74892857		0.0378	

R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.077689	63.5025	9.45960385	14.89642857	

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	610.53642857	3.41	0.0378

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: ECONWORD  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05 DF=81 MSE=89.4841  
 CRITICAL VALUE OF F=3.10931  
 MINIMUM SIGNIFICANT DIFFERENCE=6.3046

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE	GROUPING	MEAN	N	CASE2
	A	18.521	28	1
B	A	14.107	28	3
B				
B		12.061	28	2

ANALYSIS OF ECONFACT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONFACT		ECONOMIC FACTORS			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	2	74.78571429	37.39285714	1.56	
ERROR	81	1936.50000000	23.90740741	PR > F	
CORRECTED TOTAL	83	2011.28571429		0.2155	

R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.037183	58.5071	4.88952016	8.35714286	

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	74.78571429	1.56	0.2155

ANOVA TABLES

Economic Measures at Three Court Levels (Table 4-7)

ANALYSIS OF ECONTHEO

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONTHEO

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	20.09523810	10.04761905	2.04
ERROR	81	398.32142857	4.91754850	PR > F
CORRECTED TOTAL	83	418.41666667		0.1362

R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN
0.048027	241.9150	2.21755462	0.91666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	20.09523810	2.04	0.1362

ANALYSIS OF PTM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: PTM

PURE THEORY MODEL

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	4.47721628	2.23860814	3.07
ERROR	81	59.15557681	0.73031576	PR > F
CORRECTED TOTAL	83	63.63279310		0.0521

R-SQUARE	C.V.	ROOT MSE	PTM MEAN
0.070360	227.8033	0.85458514	0.37514172

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	4.47721628	3.07	0.0521

Economic Measures at Three Court Levels (Table 4-7)

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: AEM		ANTITRUST-ECON MODEL			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	2	10.91274886	5.45637443	4.25	
ERROR	81	104.03166518	1.28434155	PR > F	
CORRECTED TOTAL	83	114.94441404		0.0176	
R-SQUARE	C.V.	ROOT MSE	AEM MEAN		
0.094939	202.4938	1.13328794	0.55966553		
SOURCE	DF	ANOVA SS	F VALUE	PR > F	
CASE2	2	10.91274886	4.25	0.0176	

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

SCHIFFE'S TEST FOR VARIABLE: AEM  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05 DF=81 MSE=1.28434  
 CRITICAL VALUE OF F=3.10931  
 MINIMUM SIGNIFICANT DIFFERENCE=.75531

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHIFFE GROUPING	MEAN	N	CASE2
A	1.0633	28	1
B	0.3760	28	2
B	0.2397	28	3

ANALYSIS OF ECONCITE

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONCITE		CITATIONS TO ECONOMISTS			
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE	
MODEL	2	43.45238095	21.72619048	3.10	
ERROR	81	567.25000000	7.00308642	PR > F	
CORRECTED TOTAL	83	610.70238095		0.0503	
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN		
0.071151	341.9878	2.64633453	0.77380952		
SOURCE	DF	ANOVA SS	F VALUE	PR > F	
CASE2	2	43.45238095	3.10	0.0503	

ANOVA TABLES

Economic Measures at Three Court Levels (Table 4-7)

ANALYSIS OF ECLITCIT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECLITCIT		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	6.09523810	3.04761905	2.80
ERROR	81	88.14285714	1.08818342	PR > F
CORRECTED TOTAL	83	94.23809524		0.0667

R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN
0.064679	398.2976	1.04316030	0.26190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	6.09523810	2.80	0.0667

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LAWECON		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	695.02380952	347.51190476	5.99
ERROR	81	4699.64285714	58.02028219	PR > F
CORRECTED TOTAL	83	5394.66666667		0.0038

R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN
0.128835	207.7392	7.61710458	3.66666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	695.02380952	5.99	0.0038

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: LAWECON  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05 DF=81 MSE=58.0203  
 CRITICAL VALUE OF F=3.10931  
 MINIMUM SIGNIFICANT DIFFERENCE=5.0766

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	CASE2
A	7.607	28	1
B	2.571	28	2
B	0.821	28	3

ANOVA TABLES

Economic Measures at Three Court Levels (Table 4-7)

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ANTIJOUR CITES TO LEGAL/ECON ANTITRUST JOURNALS				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	38.38095238	19.19047619	3.90
ERROR	81	398.60714286	4.92107584	PR > F
CORRECTED TOTAL	83	436.98809524		0.0242
R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN	
0.087831	219.2252	2.21834980	1.01190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	38.38095238	3.90	0.0242

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: ANTIJOUR  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05 DF=81 MSE=4.92108  
 CRITICAL VALUE OF F=3.10931  
 MINIMUM SIGNIFICANT DIFFERENCE=1.4785

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	CASE2
A	1.8929	28	1
B	0.8929	28	2
B	0.2500	28	3

ANALYSIS OF TECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TECITES TOTAL ECONOMIC CITES				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	81.92857143	40.96428571	3.46
ERROR	81	958.96428571	11.83906526	PR > F
CORRECTED TOTAL	83	1040.89285714		0.0361
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.078710	332.2146	3.44079428	1.03571429	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	81.92857143	3.46	0.0361

A N O V A    T A B L E S

308

Economic Measures at Three Court Levels (Table 4-7)

ANALYSIS OF TECITES

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: TECITES  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05    DF=81    MSE=11.8391  
 CRITICAL VALUE OF F=3.10931  
 MINIMUM SIGNIFICANT DIFFERENCE=2.2932

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	CASE2
A	2.4286	28	1
A	0.4286	28	2
A	0.2500	28	3

ANALYSIS OF TAECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TAECITES		TOTAL ANTITRUST-ECON CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	1056.50000000	528.25000000	6.23
ERROR	81	6871.82142857	84.83730159	PR > F
CORRECTED TOTAL	83	7928.32142857		0.0031

R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN
0.133256	196.8703	9.21071667	4.67857143

SOURCE	DF	ANOVA SS	F VALUE	PR > F
CASE2	2	1056.50000000	6.23	0.0031

ANALYSIS OF TAECITES

ANALYSIS OF VARIANCE PROCEDURE

SCHEFFE'S TEST FOR VARIABLE: TAECITES  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN REGWF  
 FOR ALL PAIRWISE COMPARISONS

ALPHA=0.05    DF=81    MSE=84.8373  
 CRITICAL VALUE OF F=3.10931  
 MINIMUM SIGNIFICANT DIFFERENCE=6.1387

MEANS WITH THE SAME LETTER ARE NOT SIGNIFICANTLY DIFFERENT.

SCHEFFE GROUPING	MEAN	N	CASE2
A	9.500	28	1
A	3.464	28	2
B	1.071	28	3



ANOVA TABLES

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONWORD		ECON WORDS PER 1000		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	9.94210596	9.94210596	0.10
ERROR	82	7848.80682261	95.71715637	PR > F
CORRECTED TOTAL	83	7858.74892857		0.7481
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.001265	65.6769	9.78351452	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	9.94210596	0.10	0.7481

ANALYSIS OF ECONFACT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONFACT		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	27.28181565	27.28181565	1.13
ERROR	82	1384.00389864	24.19516950	PR > F
CORRECTED TOTAL	83	2011.28571429		0.2914
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.013564	58.8581	4.91885856	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	27.28181565	1.13	0.2914

ANALYSIS OF ECONTHEO

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONTHEO				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	2.86890838	2.86890838	0.57
ERROR	82	415.54775828	5.06765559	PR > F
CORRECTED TOTAL	83	418.41666667		0.4540
R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN	
0.006857	245.5795	2.25114539	0.91666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	2.86890838	0.57	0.4540

A N O V A    T A B L E S

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF PTM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: PTM		PURE THEORY MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	1.07148186	1.07148186	1.40
ERROR	82	62.56131124	0.76294282	PR > F
CORRECTED TOTAL	83	63.63279310		0.2394
R-SQUARE	C.V.	ROOT MSE	PTM MEAN	
0.016839	232.8363	0.87346598	0.37514172	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	1.07148186	1.40	0.2394

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: AEM		ANTITRUST-ECON MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	1.52971319	1.52971319	1.11
ERROR	82	113.41470085	1.38310611	PR > F
CORRECTED TOTAL	83	114.94441404		0.2960
R-SQUARE	C.V.	ROOT MSE	AEM MEAN	
0.013308	210.1354	1.17605532	0.55966553	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	1.52971319	1.11	0.2960

ANALYSIS OF ECONCITE

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONCITE		CITATIONS TO ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	31.71992481	31.71992481	4.49
ERROR	82	578.98245614	7.06076166	PR > F
CORRECTED TOTAL	83	610.70238095		0.0371
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN	
0.051940	343.3932	2.65720937	0.77380952	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	31.71992481	4.49	0.0371

ANOVA TABLES

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF ECLITCIT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECLITCIT		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	2.62016151	2.62016151	2.35
ERROR	82	91.61793372	1.11729187	PR > F
CORRECTED TOTAL	83	94.23809524		0.1295

R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN
0.027804	403.5896	1.05702028	0.26190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	2.62016151	2.35	0.1295

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LAWECON		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	66.86159844	66.86159844	1.03
ERROR	82	5327.80506823	64.97323254	PR > F
CORRECTED TOTAL	83	5394.66666667		0.3134

R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN
0.012394	219.8345	8.06059753	3.66666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	66.86159844	1.03	0.3134

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ANTIJOUR		CITES TO LEGAL/ECON ANTI-TRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.02513228	0.02513228	0.00
ERROR	82	436.96296296	5.32881662	PR > F
CORRECTED TOTAL	83	436.98809524		0.9454

R-SQUARE	C.V.	ROOT MSE	ANTI-TRUST MEAN
0.000058	228.1265	2.30842297	1.01190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	0.02513228	0.00	0.9454

ANOVA TABLES

312

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF TECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TECITES		TOTAL ECONOMIC CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	52.57316903	52.57316903	4.36
ERROR	82	988.31968811	12.05267912	PR > F
CORRECTED TOTAL	83	1040.89285714		0.0399
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.050508	335.1983	3.47169687	1.03571429	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	52.57316903	4.36	0.0399

ANALYSIS OF TAECITES

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: TAECITES		TOTAL ANTITRUST-ECON CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	69.47932331	69.47932331	0.72
ERROR	82	7858.84210526	95.83953787	PR > F
CORRECTED TOTAL	83	7928.32142857		0.3970
R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN	
0.008763	209.2469	9.78976700	4.67857143	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>PLAINT</u>	1	69.47932331	0.72	0.3970

ANOVA TABLES

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF ECONWORD

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONWORD		ECON WORDS PER 1000		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	22.56533161	22.56533161	0.24
ERROR	82	7836.18359697	95.56321460	PR > F
CORRECTED TOTAL	83	7858.74892857		0.6283
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.002871	65.6241	9.77564395	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	22.56533161	0.24	0.6283

ANALYSIS OF ECONFACT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONFACT		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	22.26946293	22.26946293	0.92
ERROR	92	1989.01625135	24.25629575	PR > F
CORRECTED TOTAL	93	2011.28571429		0.3408
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.011072	58.9324	4.32506810	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	22.26946293	0.92	0.3408

ANALYSIS OF ECONTHEO

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECONTHEO				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.86520404	0.86520404	0.17
ERROR	92	417.55146262	5.09209101	PR > F
CORRECTED TOTAL	93	418.41666667		0.6813
R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN	
0.002068	246.1709	2.25656620	0.91666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	0.86520404	0.17	0.6813

A N O V A    T A B L E S

314

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF PTM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: PTM		PURE THEORY MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.03400317	0.03400317	0.04
ERROR	82	63.59878993	0.77559500	PR > F
CORRECTED TOTAL	83	63.63279310		0.8347
R-SQUARE	C.V.	ROOT MSE	PTM MEAN	
0.000534	234.7589	0.88067872	0.37514172	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	0.03400317	0.04	0.8347

ANALYSIS OF AEM

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: AEM		ANTITRUST-ECON MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.07576862	0.07576862	0.05
ERROR	82	114.86864542	1.40083714	PR > F
CORRECTED TOTAL	83	114.94441404		0.8167
R-SQUARE	C.V.	ROOT MSE	AEM MEAN	
0.000659	211.4780	1.18356966	0.55966553	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	0.07576862	0.05	0.8167

DEPENDENT VARIABLE: ECONCITE    CITATIONS TO ECONOMISTS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	2.32968323	2.32968323	0.31
ERROR	82	608.37269772	7.41917924	PR > F
CORRECTED TOTAL	83	610.70238095		0.5768
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN	
0.003815	352.0010	2.72381704	0.77380952	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	2.32968323	0.31	0.5768

A N O V A    T A B L E S

315

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

ANALYSIS OF ECLITCIT

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ECLITCIT		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.17959036	0.17959036	0.16
ERROR	82	94.05850488	1.14705494	PR > F
CORRECTED TOTAL	83	94.23809524		0.6934
R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN	
0.001906	408.9298	1.07100651	0.26190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	0.17959036	0.16	0.6934

ANALYSIS OF LAWECON

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: LAWECON		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	1.22354641	1.22354641	0.02
ERROR	82	5393.44312026	65.77369659	PR > F
CORRECTED TOTAL	83	5394.66666667		0.8918
R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN	
0.000227	221.1845	8.11009843	3.66666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	1.22354641	0.02	0.8918

ANALYSIS OF ANTIJOUR

ANALYSIS OF VARIANCE PROCEDURE

DEPENDENT VARIABLE: ANTIJOUR		CITES TO LEGAL/ECON ANTITRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	1.34562503	1.34562503	0.25
ERROR	82	435.64247021	5.31271305	PR > F
CORRECTED TOTAL	83	436.98809524		0.6161
R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN	
0.003079	227.7815	2.30493233	1.01190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	1.34562503	0.25	0.6161

A N O V A    T A B L E S

316

Economic Reasoning and Plaintiff/Defendant (Table 4-9)

<u>DEPENDENT VARIABLE: TECITES</u>		<u>TOTAL ECONOMIC CITES</u>		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	3.80293298	3.80293298	0.30
ERROR	82	1037.08992416	12.64743810	PR > F
CORRECTED TOTAL	83	1040.89285714		0.5849
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.003654	343.3692	3.55632368	1.03571429	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	3.80293298	0.30	0.5849

<u>DEPENDENT VARIABLE: TAECITES</u>		<u>TOTAL ANTIITRUST-ECON CITES</u>		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	0.00290203	0.00290203	0.00
ERROR	82	7928.31852654	96.68681130	PR > F
CORRECTED TOTAL	83	7928.32142857		0.9956
R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN	
0.000000	210.1698	9.83294520	4.67857143	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>DEFEND</u>	1	0.00290203	0.00	0.9956



A N O V A    T A B L E S

317

Political Environment and Economic Reasoning (Table 4-14)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONWORD</u>		ECON WORDS PER 1000		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	20.52006129	20.52006129	0.21
ERROR	82	7838.22886728	95.58815692	PR > F
CORRECTED TOTAL	83	7858.74892857		0.6444
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.002611	65.6326	9.77691960	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	20.52006129	0.21	0.6444

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONTHEO</u>				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	9.19584287	9.19584287	1.84
ERROR	82	409.22082380	4.99049785	PR > F
CORRECTED TOTAL	83	418.41666667		0.1784
R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN	
0.021978	243.7028	2.23394222	0.91666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	9.19584287	1.84	0.1784

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONFACT</u>		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	5.37038248	5.37038248	0.22
ERROR	82	2005.91533181	24.46238210	PR > F
CORRECTED TOTAL	83	2011.28571429		0.6406
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.002670	59.1823	4.94594603	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	5.37038248	0.22	0.6406

ANOVA TABLES

318

Political Environment and Economic Reasoning (Table 4-14)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: PTM</u>		PURE THEORY MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	1.82708585	1.82708585	2.42
ERROR	82	61.80570725	0.75372814	PR > F
CORRECTED TOTAL	83	63.63279310		0.1233
R-SQUARE	C.V.	ROOT MSE	PTM MEAN	
0.028713	231.4259	0.86817518	0.37514172	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	1.82708585	2.42	0.1233

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: AEM</u>		ANTITRUST-ECON MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	3.40236482	3.40236482	2.50
ERROR	82	111.54204922	1.36026889	PR > F
CORRECTED TOTAL	83	114.94441404		0.1176
R-SQUARE	C.V.	ROOT MSE	AEM MEAN	
0.029600	208.3933	1.16630566	0.55966553	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	3.40236482	2.50	0.1176

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONCITE</u>		CITATIONS TO ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	9.97125967	9.97125967	1.36
ERROR	82	600.73112128	7.32598928	PR > F
CORRECTED TOTAL	83	610.70238095		0.2467
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN	
0.016328	349.7833	2.70665648	0.77380952	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	9.97125967	1.36	0.2467

ANOVA TABLES

Political Environment and Economic Reasoning (Table 4-14)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECLITCIT</u>		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	2.32276343	2.32276343	2.07
ERROR	82	91.91533181	1.12091868	PR > F
CORRECTED TOTAL	93	94.23809524		0.1538
R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN	
0.024648	404.2441	1.05873447	0.26190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	2.32276343	2.07	0.1538

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: LAWECON</u>		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	157.96186117	157.96186117	2.47
ERROR	82	5236.70480549	63.86225373	PR > F
CORRECTED TOTAL	83	5394.66666667		0.1196
R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN	
0.029281	217.9469	7.99138622	3.66666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	157.96186117	2.47	0.1196

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ANTIJOUR</u>		CITES TO LEGAL/ECON ANTITRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	4.29358723	4.29358723	0.81
ERROR	82	432.69450801	5.27676229	PR > F
CORRECTED TOTAL	83	436.98809524		0.3697
R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN	
0.009825	227.0095	2.29712043	1.01190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	4.29358723	0.81	0.3697

A N O V A    T A B L E S

Political Environment and Economic Reasoning (Table 4-14)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: TECITES</u>		TOTAL ECONOMIC CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	21.91917293	21.91917293	1.76
ERROR	82	1018.97368421	12.42650834	PR > F
CORRECTED TOTAL	83	1040.89285714		0.1878
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.021058	340.3569	3.52512529	1.03571429	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	21.91917293	1.76	0.1878

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: TAECITES</u>		TOTAL ANTITRUST-ECON CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	214.34087937	214.34087937	2.28
ERROR	82	7713.98054920	94.07293353	PR > F
CORRECTED TOTAL	83	7928.32142857		0.1350
R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN	
0.027035	207.3094	9.69912024	4.67857143	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>POLITIC</u>	1	214.34087937	2.28	0.1350

A N O V A    T A B L E S

321

Antitrust Violations--Judgement Approach (Table 4-16)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONWORD</u> ECON WORDS PER 1000				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	16.12691468	8.06345734	0.08
ERROR	81	7842.62201389	96.82249400	PR > F
CORRECTED TOTAL	83	7858.74892857		0.9202
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.002052	66.0550	9.83984217	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	16.12691468	0.08	0.9202

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONFACT</u> ECONOMIC FACTORS				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	131.17460317	65.58730159	2.83
ERROR	91	1880.11111111	20.66056166	PR > F
CORRECTED TOTAL	93	2011.28571429		0.0651
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.065219	57.6490	4.31780534	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	131.17460317	2.83	0.0651

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONTHEQ</u>				
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	12.21527778	6.10763889	1.22
ERROR	81	406.20138889	5.01483196	PR > F
CORRECTED TOTAL	83	418.41666667		0.3012
R-SQUARE	C.V.	ROOT MSE	ECONTHEQ MEAN	
0.029194	244.2962	2.23938205	0.91666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	12.21527778	1.22	0.3012

A N O V A    T A B L E S

322

Antitrust Violations--Judgement Approach (Table 4-16)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: PTM</u>		PURE THEORY MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	2.04082251	1.02041126	1.34
ERROR	81	61.59197058	0.76039470	PR > F
CORRECTED TOTAL	83	63.63279310		0.2671
R-SQUARE	C.V.	ROOT MSE	PTM MEAN	
0.032072	232.4471	0.87200613	0.37514172	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	2.04082251	1.34	0.2671

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: AEM</u>		ANTITRUST-ECON MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	3.30967967	1.65483983	1.20
ERROR	81	111.63473437	1.37820660	PR > F
CORRECTED TOTAL	83	114.94441404		0.3063
R-SQUARE	C.V.	ROOT MSE	AEM MEAN	
0.028794	209.7629	1.17397044	0.55966553	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	3.30967967	1.20	0.3063

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONCITE</u>		CITATIONS TO ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	22.61210317	11.30605159	1.56
ERROR	81	588.09027778	7.26037380	PR > F
CORRECTED TOTAL	83	610.70238095		0.2170
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN	
0.037026	348.2134	2.69450808	0.77380952	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	22.61210317	1.56	0.2170

ANOVA TABLES

Antitrust Violations--Judgement Approach (Table 4-16)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECLITCIT</u>		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	1.57142857	0.78571429	0.69
ERROR	81	92.66666667	1.14403292	PR > F
CORRECTED TOTAL	83	94.23809524		0.5061
R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN	
0.016675	408.3907	1.06959475	0.26190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	1.57142857	0.69	0.5061

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: LAWECON</u>		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	128.97222222	64.48611111	0.99
ERROR	81	5265.53444444	65.00857339	PR > F
CORRECTED TOTAL	93	5394.66666667		0.3753
R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN	
0.023907	219.8943	8.06278943	3.66666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	128.97222222	0.99	0.3753

DEPENDENT VARIABLE: ANTIJOUR CITES TO LEGAL/ECON ANTITRUST JOURNALS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	2.06448413	1.03224206	0.19
ERROR	81	436.92361111	5.36942730	PR > F
CORRECTED TOTAL	83	436.98809524		0.8255
R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN	
0.004724	228.9941	2.31720247	1.01190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	2.06448413	0.19	0.8255

A N O V A    T A B L E S

324

Antitrust Violations--Judgement Approach (Table 4-16)

ANALYSIS OF TECITES

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: TECITES</u>		TOTAL ECONOMIC CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	32.13591270	16.06795635	1.29
ERROR	81	1008.75694444	12.45378944	PR > F
CORRECTED TOTAL	83	1040.89285714		0.2808
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.030873	340.7303	3.52899269	1.03571429	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	32.13591270	1.29	0.2808

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: TAECITES</u>		TOTAL ANTITRUST-ECON CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	2	160.45337302	80.22668651	0.84
ERROR	81	7767.86805556	95.89960562	PR > F
CORRECTED TOTAL	83	7928.32142857		0.4369
R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN	
0.020238	209.3125	9.79283440	4.67857143	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>ANTIAPP</u>	2	160.45337302	0.84	0.4369



ANOVA TABLES

325

Type of Evidence Used to Evaluate Cases (Table 4-17)

<u>DEPENDENT VARIABLE: ECONWORD</u>		ECON WORDS PER 1000.		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	1579.23731905	526.41243968	6.71
ERROR	80	6279.51160952	78.49389512	PR > F
CORRECTED TOTAL	83	7858.74892857		0.0004
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.200953	59.4752	8.85967805	14.89642857	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	1579.23731905	6.71	0.0004

SCHIEFFÉ'S TEST FOR VARIABLE: ECONWORD  
 NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE  
 BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S  
 FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=80 MSE=78.4939  
 CRITICAL VALUE OF F=2.71878

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

<u>EVAL COMPARISON</u>		SIMULTANEOUS LOWER CONFIDENCE LIMIT	DIFFERENCE BETWEEN MEANS	SIMULTANEOUS UPPER CONFIDENCE LIMIT	
2	- 4	-1.858	9.855	21.568	
2	- 5	0.101	14.179	28.256	***
2	- 1	4.706	15.638	26.570	***
4	- 2	-21.568	-9.855	1.858	
4	- 5	-6.719	4.324	15.367	
4	- 1	-0.796	5.783	12.363	
5	- 2	-28.256	-14.179	-0.101	***
5	- 4	-15.367	-4.324	6.719	
5	- 1	-8.752	1.459	11.670	
1	- 2	-26.570	-15.638	-4.706	***
1	- 4	-12.363	-5.783	0.796	
1	- 5	-11.670	-1.459	8.752	

<u>DEPENDENT VARIABLE: ECONFACT</u>		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	403.42285714	134.47428571	6.69
ERROR	80	1607.86285714	20.09828571	PR > F
CORRECTED TOTAL	83	2011.28571429		0.0004
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.200580	53.6441	4.48311116	8.35714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	403.42285714	6.69	0.0004

ANOVA TABLES

Type of Evidence Used to Evaluate Cases (Table 4-17)

SCHEFFE'S TEST FOR VARIABLE: ECONFACT

NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=30 MSE=20.0983  
CRITICAL VALUE OF F=2.71978

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

<u>EVAL COMPARISON</u>		<u>SIMULTANEOUS LOWER CONFIDENCE LIMIT</u>	<u>DIFFERENCE BETWEEN MEANS</u>	<u>SIMULTANEOUS UPPER CONFIDENCE LIMIT</u>	
4	- 2	-4.8316	1.0952	7.0221	
4	- 5	-0.8260	4.7619	10.3498	
4	- 1	1.5925	4.9219	8.2513	***
2	- 4	-7.0221	-1.0952	4.8316	
2	- 5	-3.4565	3.6667	10.7899	
2	- 1	-1.7051	3.8267	9.3584	
5	- 4	-10.3498	-4.7619	0.8260	
5	- 2	-10.7899	-3.6667	3.4565	
5	- 1	-5.0069	0.1600	5.3269	
1	- 4	-8.2513	-4.9219	-1.5925	***
1	- 2	-9.3584	-3.8267	1.7051	
1	- 5	-5.3269	-0.1600	5.0069	

DEPENDENT VARIABLE: ECONTHEO

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	37.01761905	12.33920635	2.59
ERROR	80	381.39904752	4.76748810	PR > F
CORRECTED TOTAL	83	418.41666667		0.0587

R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN
0.088471	238.1954	2.18345783	0.91666667

SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	37.01761905	2.59	0.0587

DEPENDENT VARIABLE: PTM PURE THEORY MODEL

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	7.64192315	2.54730772	3.64
ERROR	90	55.99086395	0.62211987	PR > F
CORRECTED TOTAL	83	63.63279310		0.0162

R-SQUARE	C.V.	ROOT MSE	PTM MEAN
0.120094	223.0069	0.83659192	0.37514172

SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	7.64192315	3.64	0.0162

ANOVA TABLES

327

Type of Evidence Used to Evaluate Cases (Table 4-17)

<u>DEPENDENT VARIABLE: AEM</u>		<u>ANTITRUST-ECON MODEL</u>		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	15.42736043	5.14245348	4.13
ERROR	80	99.51705361	1.24396317	PR > F
CORRECTED TOTAL	83	114.94441404		0.0089
R-SQUARE	C.V.	ROOT MSE	AEM MEAN	
0.134216	199.2853	1.11533097	0.55966553	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	15.42736043	4.13	0.0089

SCHIEFFE'S TEST FOR VARIABLE: AEM

NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=80 MSE=1.24396  
CRITICAL VALUE OF F=2.71978

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

<u>EVAL</u> <u>COMPARISON</u>	SIMULTANEOUS LOWER CONFIDENCE LIMIT	DIFFERENCE BETWEEN MEANS	SIMULTANEOUS UPPER CONFIDENCE LIMIT
2 - 4	-1.0136	0.4609	1.7354
2 - 5	-1.2666	0.5055	2.2777
2 - 1	-0.1464	1.2298	2.6060
4 - 2	-1.9354	-0.4609	1.0136
4 - 5	-1.3456	0.0446	1.4348
4 - 1	-0.0594	0.7689	1.5972
5 - 2	-2.2777	-0.5055	1.2666
5 - 4	-1.4348	-0.0446	1.3456
5 - 1	-0.5611	0.7243	2.0098
1 - 2	-2.6060	-1.2298	0.1464
1 - 4	-1.5972	-0.7689	0.0594
1 - 5	-2.0098	-0.7243	0.5611

<u>DEPENDENT VARIABLE: ECONCITE</u>		<u>CITATIONS TO ECONOMISTS</u>		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	204.64904762	68.21634921	13.44
ERROR	80	406.05333333	5.07566667	PR > F
CORRECTED TOTAL	83	610.70238095		0.0001
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN	
0.335104	291.1471	2.25292403	0.77380952	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	204.64904762	13.44	0.0001

ANOVA TABLES

Type of Evidence Used to Evaluate Cases (Table 4-17)

SCHIFFE'S TEST FOR VARIABLE: ECONCIT

NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=80 MSE=9.07567  
CRITICAL VALUE OF F=2.71878

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

EVAL COMPARISON		SIMULTANEOUS LOWER CONFIDENCE LIMIT	DIFFERENCE BETWEEN MEANS	SIMULTANEOUS UPPER CONFIDENCE LIMIT	
2	- 4	2.6406	5.6190	8.5975	***
2	- 5	2.1822	5.7619	9.3416	***
2	- 1	3.3934	6.1733	6.9532	***
4	- 2	-8.5975	-5.6190	-2.6406	***
4	- 5	-2.6653	0.1429	2.9510	
4	- 1	-1.1188	0.5543	2.2274	
5	- 2	-9.3416	-5.7619	-2.1822	***
5	- 4	-2.9510	-0.1429	2.6653	
5	- 1	-2.1851	0.4114	3.0080	
1	- 2	-8.9532	-6.1733	-3.3934	***
1	- 4	-2.2274	-0.5543	1.1188	
1	- 5	-3.0080	-0.4114	2.1851	

DEPENDENT VARIABLE: ECLITCIT

CITATIONS TO ECON JOURNALS AND TEXTS

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	21.44857143	7.14952381	7.86
ERROR	80	72.78952381	0.90986905	PR > F
CORRECTED TOTAL	83	94.23809524		0.0001

R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN
0.227600	164.2051	0.95387056	0.26190476

SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	21.44857143	7.86	0.0001

SCHIFFE'S TEST FOR VARIABLE: ECLITCIT

NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=80 MSE=0.309869  
CRITICAL VALUE OF F=2.71878

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

EVAL COMPARISON		SIMULTANEOUS LOWER CONFIDENCE LIMIT	DIFFERENCE BETWEEN MEANS	SIMULTANEOUS UPPER CONFIDENCE LIMIT	
2	- 4	0.3580	1.6190	2.8801	***
2	- 5	0.3415	1.8571	3.3727	***
2	- 1	0.8030	1.9800	3.1570	***
4	- 2	-2.8801	-1.6190	-0.3580	***
4	- 5	-0.9508	0.2381	1.4270	
4	- 1	-0.3474	0.3610	1.0693	
5	- 2	-3.3727	-1.8571	-0.3415	***
5	- 4	-1.4270	-0.2381	0.9508	
5	- 1	-0.9765	0.1229	1.2222	
1	- 2	-3.1570	-1.9800	-0.8030	***
1	- 4	-1.0693	-0.3610	0.3474	
1	- 5	-1.2222	-0.1229	0.9765	

ANOVA TABLES

Type of Evidence Used to Evaluate Cases (Table 4-17)

DEPENDENT VARIABLE: LAWECON		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	957.16095238	319.05365079	5.75
ERROR	80	4437.50571429	55.46882143	PR > F
CORRECTED TOTAL	83	5394.66666667		0.0013
R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN	
0.177427	203.1202	7.44773935	3.66666667	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	957.16095238	5.75	0.0013

SCHEFFE'S TEST FOR VARIABLE: LAWECON

NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=80 MSE=55.4688  
CRITICAL VALUE OF F=2.71878

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

EVAL COMPARISON	SIMULTANEOUS LOWER CONFIDENCE LIMIT	DIFFERENCE BETWEEN MEANS	SIMULTANEOUS UPPER CONFIDENCE LIMIT	
2 - 5	-4.929	6.905	18.738	
2 - 4	-2.037	7.810	17.656	
2 - 1	2.804	11.993	21.183	***
5 - 2	-18.738	-6.905	4.929	
5 - 4	-8.378	0.905	10.188	
5 - 1	-3.495	5.089	13.672	
4 - 2	-17.656	-7.810	2.037	
4 - 5	-10.188	-0.905	8.378	
4 - 1	-1.347	4.184	9.715	
1 - 2	-21.183	-11.993	-2.804	***
1 - 5	-13.672	-5.089	3.495	
1 - 4	-9.715	-4.184	1.347	

DEPENDENT VARIABLE: ANTIJOUR		CITES TO LEGAL/ECON ANTITRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	32.62714286	10.87571429	2.15
ERROR	80	404.36095238	5.05451190	PR > F
CORRECTED TOTAL	83	436.98809524		0.1002
R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN	
0.074664	222.1774	2.24822417	1.01190476	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	32.62714286	2.15	0.1002

ANOVA TABLES

Type of Evidence Used to Evaluate Cases (Table 4-17)

<u>DEPENDENT VARIABLE: TECITES</u>		TOTAL ECONOMIC CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	356.94142857	118.98047619	13.92
ERROR	80	683.95142857	8.54939286	PR > F
CORRECTED TOTAL	83	1040.89285714		0.0001
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.342919	282.3109	2.92393448	1.03571429	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	356.94142857	13.92	0.0001

SCHEFFE'S TEST FOR VARIABLE: TECITES

NOTE: THIS TEST CONTROLS THE TYPE I EXPERIMENTWISE ERROR RATE BUT GENERALLY HAS A HIGHER TYPE II ERROR RATE THAN TUKEY'S FOR ALL PAIRWISE COMPARISONS.

ALPHA=0.05 CONFIDENCE=0.95 DF=80 MSE=8.54939  
CRITICAL VALUE OF F=2.71878

COMPARISONS SIGNIFICANT AT THE 0.05 LEVEL ARE INDICATED BY '\*\*\*'

EVAL COMPARISON		SIMULTANEOUS LOWER CONFIDENCE LIMIT	DIFFERENCE BETWEEN MEANS	SIMULTANEOUS UPPER CONFIDENCE LIMIT	
2	- 4	3.3725	7.2381	11.1037	***
2	- 5	2.9732	7.6190	12.2649	***
2	- 1	4.5455	8.1533	11.7612	***
4	- 2	-11.1037	-7.2381	-3.3725	***
4	- 5	-3.2635	0.3810	4.0254	
4	- 1	-1.2562	0.9152	3.0867	
5	- 2	-12.2649	-7.6190	-2.9732	***
5	- 4	-4.0254	-0.3810	3.2635	
5	- 1	-2.8356	0.5343	3.9042	
1	- 2	-11.7612	-8.1533	-4.5455	***
1	- 4	-3.0867	-0.9152	1.2562	
1	- 5	-3.9042	-0.5343	2.8356	

<u>DEPENDENT VARIABLE: IAECITES</u>		TOTAL ANTI-TRUST-ECON CITES		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	3	1257.46809524	419.15603175	5.03
ERROR	80	6670.85333333	83.38566667	PR > F
CORRECTED TOTAL	83	7928.32142857		0.0030
R-SQUARE	C.V.	ROOT MSE	IAECITES MEAN	
0.158605	195.1787	9.13157526	4.67857143	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	3	1257.46809524	5.03	0.0030

ANOVA TABLES

331

Conduct vs. Other Types of Evidence Used to Evaluate Cases (Table 4-18)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONWORD</u>		ECON WORDS PER 1000		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	660.87630867	660.87630867	7.63
ERROR	61	5283.02972308	86.60704464	PR > F
CORRECTED TOTAL	62	5943.90603175		0.0076
R-SQUARE	C.V.	ROOT MSE	ECONWORD MEAN	
0.111186	67.1280	9.30629060	13.86349206	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	660.87630867	7.63	0.0076

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONFACT</u>		ECONOMIC FACTORS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	35.39965812	35.39965812	2.09
ERROR	61	1035.48923077	16.97523329	PR > F
CORRECTED TOTAL	62	1070.88888889		0.1538
R-SQUARE	C.V.	ROOT MSE	ECONFACT MEAN	
0.033056	57.0476	4.12010113	7.22222222	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	35.39965812	2.09	0.1538

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONTHEO</u>		ECONTHEO		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	12.06859585	12.06859585	4.41
ERROR	61	167.01076923	2.73788146	PR > F
CORRECTED TOTAL	62	179.07936508		0.0399
R-SQUARE	C.V.	ROOT MSE	ECONTHEO MEAN	
0.067392	274.3243	1.65465448	0.60317460	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	12.06859585	4.41	0.0399

ANOVA TABLES

332

Conduct vs. Other Types of Evidence Used to Evaluate Cases (Table 4-18)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: PTM</u>		PURE THEORY MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	4.08512501	4.08512501	9.16
ERROR	61	27.21151322	0.44609038	PR > F
CORRECTED TOTAL	62	31.29663823		0.0036
R-SQUARE	C.V.	ROOT MSE	PTM MEAN	
0.130529	250.4980	0.66789998	0.26662887	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	4.08512501	9.16	0.0036

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: AEM</u>		ANTITRUST-ECON MODEL		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	9.46157296	9.46157296	12.01
ERROR	61	48.07228590	0.78807026	PR > F
CORRECTED TOTAL	62	57.53385886		0.0010
R-SQUARE	C.V.	ROOT MSE	AEM MEAN	
0.164452	212.3647	0.88773321	0.41684532	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	9.46157296	12.01	0.0010

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECONCITE</u>		CITATIONS TO ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	97.28976801	97.28976801	12.34
ERROR	61	481.02769231	7.88569987	PR > F
CORRECTED TOTAL	62	578.31746032		0.0008
R-SQUARE	C.V.	ROOT MSE	ECONCITE MEAN	
0.168229	353.8268	2.80814883	0.79365079	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	97.28976801	12.34	0.0008



ANOVA TABLES

333

Conduct vs. Other Types of Evidence Used to Evaluate Cases (Table 4-18)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ECLITCIT</u>		CITATIONS TO ECON JOURNALS AND TEXTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	9.90888889	9.90888889	9.60
ERROR	61	62.98000000	1.03245902	PR > F
CORRECTED TOTAL	62	72.88888889		0.0029
R-SQUARE	C.V.	ROOT MSE	ECLITCIT MEAN	
0.135945	457.2450	1.01609990	0.22222222	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	9.90888889	9.60	0.0029

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: LAWECON</u>		CITATIONS TO LAWYER/ECONOMISTS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	706.56021978	706.56021978	18.92
ERROR	61	2278.29692308	37.34912989	PR > F
CORRECTED TOTAL	62	2984.85714286		0.0001
R-SQUARE	C.V.	ROOT MSE	LAWECON MEAN	
0.236715	200.5301	6.11139345	3.04761905	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	706.56021978	18.92	0.0001

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: ANTIJOUR</u>		CITES TO LEGAL/ECON ANTITRUST JOURNALS		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	20.31120879	20.31120879	5.81
ERROR	61	213.40307692	3.49841110	PR > F
CORRECTED TOTAL	62	233.71428571		0.0190
R-SQUARE	C.V.	ROOT MSE	ANTIJOUR MEAN	
0.086906	231.0499	1.87040399	0.80952381	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	20.31120879	5.81	0.0190

ANOVA TABLES

334

Conduct vs. Other Types of Evidence Used to Evaluate Cases (Table 4-18)

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: TECITES</u>		<u>TOTAL ECONOMIC CITES</u>		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	169.29643468	169.29643468	13.21
ERROR	61	781.68769231	12.81455233	PR > F
CORRECTED TOTAL	62	950.98412698		0.0006
R-SQUARE	C.V.	ROOT MSE	TECITES MEAN	
0.178022	352.3808	3.57974194	1.01587302	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	169.29643468	13.21	0.0006

ANALYSIS OF VARIANCE PROCEDURE

<u>DEPENDENT VARIABLE: TAECITES</u>		<u>TOTAL ANTITRUST-ECON CITES</u>		
SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F VALUE
MODEL	1	966.46351648	966.46351648	17.63
ERROR	61	3343.25076923	54.80738966	PR > F
CORRECTED TOTAL	62	4309.71428571		0.0001
R-SQUARE	C.V.	ROOT MSE	TAECITES MEAN	
0.224252	191.9348	7.40320131	3.85714286	
SOURCE	DF	ANOVA SS	F VALUE	PR > F
<u>EVAL</u>	1	966.46351648	17.63	0.0001